

AMERICAN VETERINARY REVIEW.

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EDITORIAL.

ILLEGAL PRACTICING IN NEW YORK STATE.

The fact is incontestable that veterinary medicine and surgery as a science and as a profession has gone forward more rapidly in America than history will disclose in any other country where it is established. The chief factor in the production of this result is the American veterinarian himself. Being the exponent of a noble cause—one which appealed to the hearts of men, aside from its commercial advantages—he was strong in his convictions that his place was among the advanced and learned sciences, and he threw into the struggle the indomitable energy and determination which marks American character. Under such conditions it was practically irresistible; and what fifty years has witnessed is but the first chapter in the history of the advance. The representatives have been progressive and aggressive. They have formed associations, discussed their needs, appointed committees of live workers to carry out their wishes, and these men have not been afraid to make their wants known to the law-making authorities, whose rebuffs but strengthened their determination to overcome all obstacles. It made no difference whether the law-giving power resided in municipal, state, or national legislation; they attacked the source with equal vigor and intelligence, and if they failed in their first attempt it simply meant a renewal of the efforts; should failure again be their portion, additional pressure was brought to bear, until final success was secured.

New York veterinarians have not been the least active and insistent in such matters; in fact, while the veterinarians of other States were equally clamorous in their efforts to place veterinary medicine upon the firmest legal foundation, it may be truthfully said that New York was ever the leader in all such movements. She it was who secured the first practice act, and, while it has been often assailed (principally by those who put forth the least exertion to secure any law) for the laxity of its provisions, it has been latterly so strengthened as to be practically without serious objection—if faithfully lived up to. The enforcement of the penalty clause of our law has ever been a difficult problem, on account of which offenders have become so numerous as to cause many to unthinkingly assert that the law itself is inadequate. Sober reflection, however, is quite sufficient to convince any intelligent person that there is not a law of the land which is not inert and useless unless the arm of justice intervenes to have its provisions fulfilled. If a burglar robs a bank it is admitted that he has violated a law; but with no one to hunt him down and bring him before the bar of justice for punishment the law is a dead letter. So with our law; when it is violated with impunity, it becomes of no value in a practical sense. It is true, a few individuals in different parts of the State have undertaken at various times to hale before the courts gross cases of violation of the statute, and whenever vigorously pursued conviction has followed. But such instances have been so rare and unsystematic that offenders have become emboldened, until now they neither ask permission nor offer apologies. The editors of the REVIEW have received many letters recently calling their attention to individuals practicing in various sections of the State without having the legal right to do so. In one instance it is a graduate of a two-year school who, ignoring the Regents' requirements for registration, simply puts up his sign and begins to practice; in another, a person attends a legitimate school the required three sessions, but fails to pass the faculty examination, but starts into business just the same as though he had won their approval, as well as

that of the Board of Examiners; a third attends college one year, and by some unexplained method registers in the clerk's office of the county of his residence on the strength of a "diploma" of an alumni association, and competes for business with men who have fulfilled every requirement; and yet another individual matriculates at a veterinary school, attends a few lectures, and decides that college life is a waste of time, for he quits it, mandamuses the county clerk, who reopens registry books closed for years, for the reason that a physician's certificate states that when the books were open the applicant was prevented by sickness from being registered. This applicant swore that for five years prior to the closing of the books in the early nineties he was a practitioner of veterinary medicine, while a common-sense glance at the petitioner by the judge who gave the order would have convinced him that he must have made calls in the first years of his practice dressed in knickerbockers and a Lord Fauntleroy belt, as he is but a young man at the present date. The latest offense which has come to our knowledge is the case of a farmer who registered with his county clerk in 1899 and began practicing just as though no law of the State was being violated.

These violations appear to be multiplying with great rapidity, chiefly for the reason that but few prosecutions have been undertaken. Thus it is that our law has become practically a dead one, although it is a sovereign statute, and punishment is bound to follow conviction. The law is mandatory, and all that is requisite to enforce its penalties is to prove the case before a court of competent jurisdiction. The question is, how can this best be accomplished? The REVIEW believes that the individual members of the profession should purify their own districts by boldly challenging the right of any man to practice this profession who has failed to comply with the requirements of the State law governing it; and, further, it would appear that any veterinarian who fails to do so is aiding and abetting such violator and is breaking faith with the laws of good citizenship and the welfare of the profession of his

adoption. Just here is the opportunity for local associations to exert one of their functions for the benefit and the purity of their profession; and in the populous Empire State the whole territory might be covered by such organizations. For instance, the metropolitan district would be in charge of the Veterinary Medical Association of New York County; the adjoining districts up the river would fall to the jurisdiction of the Westchester County Society; further up the State the Genesee Valley Association would look after transgressors, while local organizations might be formed in thickly populated districts with the same object in view. These associations, operating in harmony with the State Society, could police the entire commonwealth, so that in a very short time such a circumstance as a man attempting to practice without a legal right to do so would be extremely rare.

At the approaching meeting of the State Society at Ithaca this question will be brought forward for discussion, and it is hoped that those gentlemen who have written to the REVIEW complaining of such instances will be present to assist in the formulation of a plan to eliminate such occurrences by prosecuting the offenders.

DR. M. H. REYNOLDS, State Veterinarian of Minnesota, has received the appointment of dean of the Iowa Agricultural College at Ames. He graduated from this college in 1889, and engaged for a few years in private practice, but finding research and investigation more to his tastes soon drifted into State medicine, and accepted appointment in Minnesota, where he has labored ever since—so assiduously, so intelligently, and with such dignity and success that he has attracted the attention of the whole country and has brought the control of animal diseases in his State up to a point where the example serves as a model to other States. The Iowa profession are rejoicing that their distinguished brother is to be returned to them, feeling that under his leadership their interests and standing are to be advanced through his intelligent counsel and

efforts. The good work already accomplished by the Iowa College is certain to be continued under his guidance.

"REPORTS OF CASES" are very interesting in this number. Dr. Martin tells of the difficulties both of diagnosis and treatment of torsion of the uterus in a mare. Dr. Walter Shaw describes the unusual operation of castrating an elephant, and shows how a defective instrument robbed him of a successful issue. Dr. Ellis deals with a somewhat less ponderous patient, but is more successful than either of the other surgeons, for he performs the radical operation for hernia in a cat with perfect recovery. These are the kind of case reports that do good. The authors give the details of their procedures, including the weak points, so that all may profit by their experiences.

DR. ADOLPH EICHHORN, of the American Veterinary Hospital, New York, has accepted the post of editor of "German Review" for this publication. He is a hard student, an enthusiast in his profession, and REVIEW readers may anticipate being kept in close touch with all that transpires of interest in the Teutonic tongue.

DO NOT FORGET the annual meeting of the New York State Society, which convenes at Ithaca, Sept. 12, and lasts two days. The surgical clinic will be a special feature, while papers on absorbingly interesting subjects will be offered for discussion. A large attendance is assured, with a big addition to the membership.

IF you were prevented for any reason from attending the great meeting of veterinarians in Detroit, you may be sure that the REVIEW will give you a faithful account of all that occurs there in its October issue.

WE COMMEND an article, elsewhere printed, by Dr. Joseph W. Parker, of Kansas City, entitled "Educating Lawmakers," as being of the right ring and up-to-date.

ORIGINAL ARTICLES.

OVARIOTOMY IN THE DOMESTIC ANIMALS.

PRESENTED TO CORNELL UNIVERSITY BY CHARLES HENRY JEWELL,
FOR THE DEGREE OF DOCTOR OF VETERINARY MEDICINE,
JUNE, 1900.

Under the Direction of W. L. Williams, Prof. of Surgery, at N. Y. State Veterinary College, to whom acknowledgment for valuable assistance is given.

(Concluded from page 360.)

The operation in the sow is practically the same as in the bitch and cat, remembering that the cornua are long and flexuous and floating freely among the convolutions of the small intestines. After securing the horn one can draw the ovary out and remove.

The operation in yearling heifers and calves is of necessity performed through the abdominal walls. The animal is cast and secured, the hair clipped from the operating field, the parts washed, shaved and thoroughly disinfected; then an incision is made according to the mode of operation selected, some operating through the flank, while others prefer the linea alba. I prefer and shall describe the flank operation. An incision is made through the skin and skin muscle midway between the external angle of the ilium and the last rib, and then the muscular bundles of the external and internal muscles separated consecutively with the scalpel handle or other blunt instrument, and then puncture or rupture the peritoneum large enough to admit the hand; this done, the hand is passed into the abdominal cavity, locating one, usually the uppermost cornu, and tracing it to the ovary, grasp it, pass the long curved scissors through the wound and cut off the gland, making sure to retain the same and bring it to the outside, and repeat the operation upon the other in the same manner. The incision should be sutured with some strong material, linen or silk, and dressed antiseptically. Should it be in the season of flies guard against the attacks of their larva by accurate suturing and antiseptis.

Dangers Involved in the Operation.—In the cow and mare there is a possibility of wounding some important arteries of the pelvic region, namely, the external and internal iliac or the posterior aorta; should this be done the animal will die in a few minutes. Such losses rarely occur. This will not happen if care be exercised when making the incision. Another danger in both mare and cow is the puncture of the rectum by a misdirected incision, which would tend to fatality if the peritoneal sack be opened. In the cow we have the danger of puncturing the rumen, which would give serious trouble and likely lead to death of the animal. In the smaller animals it is an easy matter to grasp the posterior aorta or one of the iliac arteries and rupture it. In all animals there is danger of infection being carried into the abdominal cavity and causing peritonitis, which may terminate fatally.

The bitch, cat and pig are not so liable to infection as the larger animals, but such are not immune, and hence great care should be exercised in maintaining strict asepsis in operating.

Results Obtained from Spaying Mares.—Since opening the New York State Veterinary College in September, 1896, to the present date (March 24, 1900), there have entered in the clinics twenty-four mares for spaying, all of a vicious disposition, and a large number more markedly so at the period of œstrum. Of these cases which have been carefully observed a large number, probably seventy-five per cent., have been rendered peaceable, docile and valuable work animals, from previously almost worthless mares. The other twenty-five per cent. operated upon have in the majority of cases been rendered less vicious. In cases in which the animal persistently catches and tightly holds the reins with the tail the operation of caudal myectomy conjoined with spaying seems to have markedly beneficial results, completely obviating the difficulty. The results obtained at the New York State Veterinary College prove that in mares in which viciousness arises from the period of "heat," spaying is a specific, also in cases of diseased ovaries, such as

cyst and cartilage formation which have been found in several nymphomaniac mares.

The animals spayed at the college clinic have not as a rule suffered any inconvenience, no loss of appetite, no rise of temperature, no emaciation or falling off in condition. Of the whole number operated upon, mostly by the students, only one fatality has occurred, that by wounding the iliac artery, the animal dying in the stocks. In one case only had we any serious trouble, and this came from an abscess of the rectum, which may have been from a wound made by the operator, or might have had a previous existence. The animal made a good recovery after giving enemata daily conjoined with antiseptics.

Of the cases brought to the clinics of the New York State Veterinary College, I will give the data as to reasons for operating, any conjoined operation, date of spaying and results.

<i>Clinical No.</i>	<i>Reasons.</i>	<i>Date.</i>	<i>Operation.</i>	<i>Results.</i>
314	Kicked when in "heat." Very vicious for years.	Dec. 16, '97.	Spaying and Caudal Myectomy.	Improved.
677	Kicked when in "heat" and caught rein with tail.	Apr. 16, '97.	Spaying and Caudal Myectomy.	Improved.
944	Kicked at period of "heat."	Apr. 3, '98.	Spayed.	Improved.
1014	Unpleasant to work at period of "heat."	May 2, '98.	Spayed.	Cured, very docile.
1022	Unpleasant at period of "heat."	May 17, '98.	Spayed and Caudal Myectomy.	Now very gentle.
1075	Vicious at time of "heat."	May 26, '98.	Spayed and Caudal Myectomy.	Improved.
1367	Constant kicker.	Nov. 16, '98.	Spayed.	No marked imp'ment.
1434	Kicked all the time (chondroma of ovaries).	Dec. 14, '98.	Spayed.	Now gentle.
1487	Kicked and constantly squealing when in "heat."	Dec. 28, '98.	Clitoris removed 2 yrs. before. Spayed.	No change. Now kind.

1585	Kicked during "heat." Would not work at such times.	Feb. 21, '99.	Spayed.	Improved, now kind.
1692	Kicked at period of "heat."	Apr. 1, '99.	Spayed.	Now kind.
1727	Kicked when in "heat."	Apr. 17, '99.	Spayed and Caudal Myectomy.	Now kind.
1818	Kicker, and worse at period of "heat."	May 13, '99.	Spayed.	Now kind.
1841	Kicker, worse at time of "heat."	May 23, '99.	Spayed.	No marked imp'ment.
1981	Kicker, worse at time of "heat."	Oct. 16, '99.	Spayed and Caudal Myectomy.	Now kind.
1999	Persistent kicker.	Oct. 23, '99.	Spayed and Caudal Myectomy.	Improved.
2072	Unpleasant to work, switching.	Dec. 1, '99.	Spayed.	Improved.
2143	Switcher and kicker.	Dec. 5, '99.		Fatality from incision into iliac artery.
2146	Switching and kicking at time of "heat."	Dec. 6, '99.	Spayed.	Improved.
2257	Kicker and habit of catching rein.	Feb. 12, '00.	Spayed and Caudal Myectomy.	Improved.
2272	Unpleasant animal to work.	Feb. 19, '00.	Spaying and Caudal Myectomy.	Of recent date, results not yet determined.
2274	Unpleasant animal to work.	Feb. 19, '00.	Spaying and Caudal Myectomy.	Of recent date, results not yet determined.
2286	Unpleasant to work, caught rein.	Feb. 27, '00.	Spaying and Caudal Myectomy.	Of recent date, results not yet determined.
2314	Unpleasant at time of "heat."	Mar. 12, '00.	Spaying.	Of recent date, results not yet determined.

Results in the Cow.—Of the animals operated upon which I have carefully watched it seems a well-established fact that spaying dairy cows which dairymen are not desirous of breeding is

of benefit from a commercial standpoint. Such animals are peaceable when at pasture, give a steady flow of milk for a period varying from two to five years, and taking on flesh so as to be fit for the slaughter at any time. The operation as a factor in stimulating milk production and increasing the amount of butter fat does not hold true in our experiments upon two Holstein cows, property of the Cornell University farm, spayed November 22, 1899.

One was nine and the other five years old, both were large and in fine condition. The milk from each was weighed from day to day, before and after spaying, and tested once a week for the percentage of butter fat.

NO. 1, NINE YEARS, CALVED SEPT. 6, 1899.

The weight of milk for first	week	194.5 lbs.	% butter fat	3.2
" " " " second	"	233.5	" "	3.2
" " " " third	"	242.8	" "	3.2
" " " " fourth	"	248.5	" "	3.4
" " " " fifth	"	250	" "	2.7
" " " " sixth	"	256.6	" "	3
" " " " seventh	"	288.8	" "	2.9
" " " " eighth	"	274.2	" "	2.8
" " " " ninth	"	268	" "	3.2
" " " " tenth	"	268.5	" "	2.7

(November 22, Spayed.)

The weight of milk for eleventh	week	217.5 lbs.	% butter fat	3
" " " " twelfth	"	227	" "	3
" " " " thirteenth	"	223.4	" "	2.9
" " " " fourteenth	"	232.1	" "	3.2
" " " " fifteenth	"	231.8	" "	3.8

Daily milk production previous and following.

Nov. 18, 1899	38.7 pounds.
" 19, "	38.6 "
" 20, "	39.9 "
" 21, "	38 "
" 22, " (spayed)	36.8 "
" 23, "	18.3 "
" 24, "	28.5 "
" 25, "	31.9 "
" 26, "	33.9 "
" 27, "	32.6 "
" 28, "	35.2 "

NO. 2, FIVE YEARS OLD, CALVED OCT. 26, 1899.

Weight of milk for the first	week	177.7 lbs.	Fat	4.1 %
" " " " " second	"	181.3	"	3.6 "
" " " " " third	"	173.3	"	4.3 "

(Spayed November 22.)

Weight of milk for the fourth	week	168 lbs.	Fat	3.2 %
" " " " " fifth	"	169	"	3.3 "
" " " " " sixth	"	153.7	"	3 "
" " " " " seventh	"	145.6	"	3.4 "
" " " " " eighth	"	159.3	"	2.8 "

Daily milk production prior and following.

Nov. 18, 1899	27.2 pounds.
" 19, "	23.8 "
" 20, "	25.5 "
" 21, "	29 "
" 22, " (spayed)	22.3 "
" 23, "	16.5 "
" 24, "	24.6 "
" 25, "	22.8 "
" 26, "	27.8 "
" 27, "	28 "
" 28, "	26 "

We see by the above data that on the day following the operation there was a decided falling off in milk production, but no great difference on the second day.

In my observations the operation does not increase the amount of daily milk production, but as it dispenses with the period of "heat," we get a uniform milk flow, which is not the case with entire cows.

Any person accustomed to the care of dairy cows is aware of the fact that many animals fall off one-half or even more in the milk yield during the periods of œstrum, which means a considerable loss to the owner during the year. When the cow is spayed we not only do away with all trouble attending the period of "heat," but the accidents and ailments attending gestation and parturition.

The operation in nymphomaniac cows is one of great value, as it completely destroys their sexual desires and renders them profitable dairy animals. One of these cows spayed by the college clinic has been in milk over two years and still yielding a good flow.

Spayed cows apparently make better mothers than the entire animals, taking kindly to calves of other cows placed with them.

The conclusions reached after carefully studying the results of my own experiments and the observations of others as recorded in the veterinary literature of the United States and Europe, are as follows :

Cows which have come to the age of decline and are not profitable as breeding animals, if spayed can be made profitable from the milk produced while fitting them for the slaughter. The operation is also indicated in the nymphomaniac cow. Careful tests, however, indicate that the value of this operation in dairy cows has often been exaggerated.

HEALING OF EXTERNAL WOUNDS.

BY J. A. SLOAN, V. S., ST. JOSEPH, MO.

Read before Missouri Valley Veterinary Medical Association, June 25, 1900.

The particular phase of the subject to be discussed in this paper is that relating to the pathological processes in the healing of wounds and with no particular reference to their treatment. The discussion will also be principally confined to wounds of such a size and condition as are healed by the visible formation of new tissue and less fully to those which heal by primary union. There are two reasons why this part of hypertrophy and regeneration of tissue is selected.

1. Because such wounds are of everyday occurrence and therefore important.

2. Because the subject is too vast to discuss in its entirety.

It is said that "a wound is a recent solution of continuity of the living tissues induced by some mechanical cause." Some writers hold that all wounds are on the outside surface of the body, involving an abrasion of the skin, but this will hardly cover contused wounds. While external influence may hasten or retard the process of repair they will not be considered except when suppuration intervenes.

The processes of repair apparently vary according to the severity of the injury, while in fact they are practically similar except in extent and length of time necessary to recovery.

The exceptions to this are two.

First: Those where there is such a trifling destruction of cells that simple regeneration of the essential surrounding cells is sufficient for repair.

Second: Where the wound is somewhat greater in extent but still within the capacity of the connective tissue to repair by hyperplasia and regeneration without the intervention of embryonic and granulation tissues.

By healing is meant the removal of foreign material from a wound and the replacement of the destroyed or degenerated tissues by new tissue. Hyperplastic and regenerative growth of tissue is ushered in by cell multiplication by karyokinesis and is inseparably associated with the phenomena of inflammation. In fact, so much so that it is impossible to consider one subject without involving the other. Proliferation occurs most readily when there is little inflammation present and only a slight exudate, for the presence of any irritant retards the process by increasing the inflammation and exudation and may lead to suppuration.

The ability to form new tissue lies in the proliferative faculty of the cells. These do not multiply under normal conditions, but when a wound is to be repaired some kinds of tissues proliferate with readiness and rapidity.

Hyperplasia and regeneration of tissue are by no means confined to the repair of wounds, for they always accompany productive or proliferative inflammation. It is found that in the connective tissues is a reserve force which is ready and convenient whenever the tissues surrounding a wounded area, whether due to injury, degeneration or necrosis, cannot repair the breach. If the injury is beyond the capability of the surrounding tissues to repair, the space is filled by connective neoplasia or scar tissue. Because inflammation is always present in these processes it has been called proliferative inflammation and it is present

regardless of the presence or absence of foreign material. If proliferation is repeatedly interfered with, as, for instance, because of great irritation by pathogenic germs or external violence, the cells lose their power of regeneration and an ulcer is the result. On the other hand, proliferation in a healthy patient may be so active and extensive that exuberant granulations appear with a considerable thickening of the adjoining parts. At this stage anything that will reduce inflammation will check granulation.

Wounds are divided according to cause into : Incised, punctured, lacerated, contused, etc. In veterinary practice external wounds are generally infected. This condition it is impossible to avoid because of septic surroundings and the impossibility in many cases to apply a bandage.

Wounds are said to heal by first intention, second intention, granulation, etc. The reparative process is much the same in all of these, for in all there has been destruction of tissues and regeneration is necessary to repair. Therefore such a classification seems unnecessary except as a matter of convenience.

- There is a macroscopic difference in the healing of a wound whose edges are held in close apposition and whose changes are hidden from the eye, and that of a large, open wound where the granulations can be plainly seen, but practically the means of repair are similar.

Healing by first intention occurs in slight aseptic wounds where there is a little destruction of tissues, in incised wounds and where the edges can be brought in close apposition. If there is no foreign material to be eliminated there should be an almost imperceptible amount of inflammation present and very little exudate to be absorbed or otherwise disposed of. Union is then hastened by plastic adhesion of opposing edges by means of the serous exudate. This adhesion plays a passive part in regeneration of wounds and, as repair progresses, is absorbed. Adhesion has been mistaken for healing and desiccation of the exudate for formation of a scab. That this adhesion is not healing is proven in cases where pus germs have been enclosed.

In a day or two these germs in presence of excellent nutrition, proper temperature and moisture multiply with the formation of pus and the exudate softens and gives way. Immediate union is impossible. Adhesion may be sufficiently firm to require no bandage to keep the parts in apposition, but it is not healing.

The writer is convinced that plastic adhesion has taken place in wounds which have been said to have "healed in a few hours," or even in a "day or two" and not healing. This adhesion aids the reparative process by holding the edges of the wound in close apposition, preventing motion of these edges on each other and excluding foreign materials. The presence of any foreign material will prevent healing by primary union, because it becomes an irritant, setting up increased inflammation with its attendant phenomena of emigration of leucocytes and formation of pus. Even extravasated blood, if in appreciable quantities, becomes a foreign body and an irritant and furnishes a medium for the propagation of bacteria. In no instance is it possible for this extravasated blood to assist in the process of repair and it is a common mistake for veterinary surgeons to bind up a wound before hæmorrhage ceases. The blood, too, may form a clot in the wound, prevent all possible contact of opposing edges and thus give a cavity which later must be filled by granulation.

When a small, aseptic, incised wound is closed by sutures an exudate takes place from the suture openings. This is because the sutures have made a small, open wound with destruction of more or less tissue. It is nicely illustrated by a neat operation of plantar-neurectomy. If the injury is very slight new cells are soon formed to replace those destroyed, with little or no change in structure, and is the nearest possible approach to immediate union. In this case, the earliest signs of proliferation may be seen in about eight hours after infliction of the injury, and very readily seen after twenty-four to forty-eight hours. In wounds of a somewhat larger size there is infiltration of the surrounding tissues, exudate upon the cut surface,

and later proliferation of connective tissue from the sound tissue through the infiltrated area and into the wound, which finally firmly binds the edges and constitutes healing by primary union. Proliferation of epithelium completes the process.

As an aid to primary union these steps should be observed :

First: Arrest and prevent hæmorrhage.

Second: To remove all foreign substances.

Third: Apply suitable bandages both to keep the parts in close approximation and also to prevent the entrance of pathogenic germs. About the shortest possible time for these wounds to heal under the most favorable circumstances is seven to eight days.

Healing by granulation, or so-called second intention, is seen in wounds where the changes are visible to the unaided eye and where there has been extensive destruction of tissue.

This process consists of three stages.

First: The formation of a deteriorated or embryonic tissue which develops into second. Granulation tissue, and

Third: Completes the repair by a further change into cicatricial tissue. This process is entirely competent to repair any wound or to make an uninterrupted continuity of tissues. The repair is not of normal tissue and there is a loss of function because of the intervention and usually the preponderance of the connective tissue. The normal tissues do not possess the ability to close up the wound.

Embryonic tissue consists largely of cells and blood vessels, and is never found except where the injury is beyond the ability of the surrounding tissues to repair it. The cells are mostly small, rounded in shape and infiltrated with leucocytes—mono and polynuclear—which have emigrated from the circulation. The number of leucocytes determines the intensity of the inflammation present and conversely the rapidity of recovery. The cells of embryonic tissue have been called proliferative, or formative cells, because they give rise to the future tissue. In the early stage of its development it depends upon the tissue from which it sprung for its support, but later blood

vessels quickly develop for its sustenance and growth. The blood vessels proliferate by a process of budding or sprouting from the neighboring uninjured vessels, and develop rapidly with the formation of numerous loops, which give a reddish color to the tissue. About each loop is a collection of cells which give to the tissue a beady appearance. The rich, vascular supply favors a rapid cell growth and an abundant proliferation. From connective tissue cells, fibroblasts are formed, which change into branch and spindle-shaped cells, and later lie closely together, forming the bundles of fibres which constitute the cicatricial tissue. Granulation tissue is the next stage, and is developed from the embryonic by the formation of cellular elements similar to the parent tissues. Part of the cells are enlarged or hypertrophied tissue cells which undergo division and enlargement indefinitely, depending on the extent of the injury and favorable termination of the whole process. When it develops into granular masses it is popularly known as "proud flesh," and is a source of uneasiness to the layman. While it is confined to the cavity which it attempts to fill or does not project beyond the edge of the wound, no interference is necessary, as it is the proper and only means of repair. This tissue is also very vascular and is very easily injured, because it has no protective covering. The third stage is the development of granulation into cicatrical or scar tissue. This is accomplished through the formation of branched and spindle-shaped fibroblasts which unite into bundles. Proliferation of the epithelium has followed the filling up of the cavity as far as possible, and when it ceases the rest of the new tissue is covered by a dense layer of cicatricial tissue, or "scar." At this stage the scar is reddish in color, smooth, devoid of hair or glands of the skin and tender to the touch. With the formation of cicatricial tissue the reparative process is completed, although changes still occur. Contraction begins, causing atrophy of all its tissues. Blood vessels, nerves and connective tissues diminish and consequently the size of the cicatrix, and may lead to deformity and partial loss of function. It becomes

of a dense, white appearance and approaches more and more to the tissues from which it springs. These latter changes may spread over a period of several months. At the risk of being tedious I will refer quite briefly to the important phenomenon of phagocytosis by means of which pathogenic germs are destroyed. It is held by some pathologists that phagocytosis begins with the emigration of leucocytes, but later is actively carried on by the phagocytes and fibroblasts, or cells of connective tissue origin. When only a few bacteria are present they may become a prey to the leucocytes, and if no other germs gain access to the wound infection will not follow. There is little doubt that this process plays an important part in the healing of wounds by preventing in part or entirely the multiplication of bacteria. This phenomenon is accomplished by the amoeboid movement of the leucocytes, each cell enclosing a germ. The fibroblasts may close half a dozen cells, as leucocytes do the cause of infection or any other cells, living or inert. The bacterium may be retained until destroyed or carried into the lymphatic system and deposited in a lymphatic gland. Sometimes the bacterium is too virulent and destroys the leucocyte and so obtains its freedom. As phagocytosis tends to limit the multiplication of pathogenic germs and in that way prevents an increase in extent and intensity of inflammation, so its effect on regeneration will be appreciated when we remember that wounds heal most quickly when there is no infection, and but little inflammation present.

EDUCATION OF LAWMAKERS.

BY JOSEPH W. PARKER, D. V. S., KANSAS CITY, MO.

Read at Twenty-fourth Regular Meeting of the Missouri Valley Veterinary Association, St. Joseph, Mo., June 25, 1900.

Modern politics appeals to intelligence. A bureau of publication is now an essential feature of every successful political campaign. It has been said that the education of a child should begin three generations before it is born. To para-

phrase, it might be said that the education of a lawmaker must begin with the people who elect him, or on whom he depends for further political successes. Whatever a large part of the people demand, their representatives must and will enact. Legislators are seldom far in advance of their constituency.

The concentrated primary aim of veterinarians, relative to needed legislation, therefore, must be to inform the public by precept and example that the profession is one which should be regulated by law—that the demand for legislation in these matters arises from the needs of the public. In the practice of veterinary medicine the interests of the patron and of the general public are involved. The immense value of domestic animals and their products, and the intimate relations existing between diseases of the lower animals and of man, justify and demand not only that those who are permitted to practice shall be required to furnish evidence of their qualifications, but laws to effectually control the spread of infectious and contagious diseases and for the supervision of the food supply of the public.

It devolves upon regular veterinarians to be the leaders in the campaign of political agitation and education, as by their training they are especially fitted to be. The approaching biennial sessions of the Legislatures of Missouri and Kansas and Iowa, and the State elections to be held next fall make this a peculiarly fitting time and occasion for renewal of activity on the part of veterinarians, and especially on the part of this association. Whether we succeed at this time or not, in securing the recognition at which we aim, we will be laying the foundations for success in the future. I take it that there is no question in the mind of any one present whether the members of the Missouri Valley Veterinary Association will loyally coöperate to secure legislation next winter; it is only a question of how we shall approach the task before us. It is with the hope of exciting discussion which shall evolve a practical plan of action that the essayist has undertaken to present this subject before you.

The foundations of the campaign must be established in the minds of voters, broad and strong as befits the growing im-

portance of the subject. The public is to be reached in three ways, viz.: Through personal contact ; from the speaker's platform, and through publications.

First in importance is personal influence. To have intimately known a man of high honor, is to have an exalted opinion of man in general ; the community that has been fortunate enough to have in its midst a qualified, honorable veterinarian has had its opinion of that profession elevated and broadened. No matter whether the doctor be eloquent or not, or whether he be able to write a convincing article in the most polished language, if he is one of Nature's noblemen, honest, conscientious, diligent and thorough in business and courteous in his business and social intercourse, he is elevating his profession in the minds of his patrons and fellow citizens. He shows forth in a very practical and convincing way that his personal interests are in harmony with the interests of his patrons, and with the public good.

While it is essential that our calling shall be regarded favorably as a learned and highly useful calling, our demands for legislation must be for those things which are to the interest of the public. The profession is dignified by the earnestness with which we seek after the public good, not primarily selfish interests. Whatever degree of respect the title "veterinarian" commands is the result of the silent teaching of a very limited number of veterinarians (for in these States we are few and far between), and in spite of the disrepute resulting from itinerary practice of hundreds of quacks. By maintaining among the profession a high standard of personal and professional ethics, thus increasing the usefulness of the calling, favorable opinions must be won of the public before they may be expected to listen to veterinarians in matters of legislation.

For reaching people interested I believe that farmers' institutes offer opportunities promising good results. If arrangements can be made with the promoters of farmers' institutes to place a veterinarian on each programme whenever practicable, doubtless competent men can be found who for their interest in

the progress of the public and the advancement of veterinary science will prepare papers or addresses on subjects that interest both farmers and veterinarians. At suitable times exhibits might be made a feature of the veterinary talk. To effect this, coöperation of veterinarians is essential, for no one man can afford to take from his time and business to attend all farmers' institutes unless salaried for that purpose. Stockmen's meetings also afford excellent opportunities for the education of the public, and a veterinarian should be on every programme. As men making some pretensions to learning, veterinarians must identify themselves with progress in all matters related to their work.

We are fond of referring to the broad field of usefulness of our profession, but remember that it is useful to others only as we make it so, and it rewards us according to our deserving. Granted that the veterinary profession has already won in these States the respect of those who have influence in our legislative bodies, and that our demands are for those laws which would be for the benefit of the public, we may hope to accomplish something at the ensuing election and with the State Legislatures.

Newspapers may also be used to advantage at times. In agitations for pure food supply, control of infectious and contagious diseases, sanitation, and kindred topics, the columns of the secular press will certainly be utilized, and their articles should not be inspired by ignorance of the true merits of the questions, or by malice of those whose interests are opposed to the interests of the public.

Legislators are to be influenced by the same considerations which influence the opinions of others; by public sentiment, by appeal to their personal ambition and vanity, and by lobbying. I believe that the average statesman (pardon the misapplication of the word) oftener asks himself whether this or that official act will improve his chances of further political preferment, than he concerns himself with the public good. When the interests of his constituency and his own political prospects are in har-

mony, well and good ; but if there is apparent conflict, the interests of the public are usually sacrificed.

As veterinarians we must therefore become practical politicians and lobbyists ; must be known as local writers for the secular press, and as speakers on all suitable occasions. We must coöperate with mind, money and motive, and above all and including all these must be imbued with professional *esprit du corps*, and actuated by altruistic motives.

DEFECTIVE EYELIDS.

By R. C. MOORE, D. V. S., KANSAS CITY, MO.

A Paper read before the Missouri Valley Veterinary Medical Association, June 25, 1900.

In the present discussion of this subject I desire to confine myself to three conditions that are most generally congenital, namely, ectropion, entropion, and blepharostenosis. Ectropion signifies an everted eyelid, either from an insufficiency of the skin of the lid, a destruction or shrinking of the same from injuries, an over-development of the mucous membrane, or insufficiency of the orbicularis palpebrarum muscle, either of which causes a displacement of the eyelid, turning its conjunctival surface outward, with, if it be the lower lid, a downward displacement of the ciliary margin, or an upward displacement of the same if it be an upper one. The eye thus being deprived of its natural protection, is liable to chronic conjunctivitis with all its accompanying evils ; ectropion is rare in equines and bovines, but common in the canines ; especially is this so in the Saint Bernard and English bloodhound.

This condition is almost entirely confined to the lower lid, and its treatment depends largely on the cause. If it be from over-development of the conjunctival membrane, an elliptical piece of this should be removed in the following manner : The animal being placed under the influence of an anæsthetic, the eyelid is everted, and a portion of the membrane grasped with a pair of forceps and excised. The piece must be elliptical in

shape, and in size to correspond to the over-development of the membrane. The outer incision must be parallel with the ciliary margin, and sufficiently far from it to allow room for suturing. The angles made by the counter incisions which is carried back of the forceps should be near the inner and outer canthus. The incisions should be made straight through the membrane at a right angle to its surface so the edges will come together evenly. After the piece is dissected, the edges of the membrane are to be brought together by sutures of a light, soft material placed so the knot will be as near as possible to the ciliary margin, where it will produce the least possible irritation to the eye, and left to heal by first intention, which should be assisted by mild non-irritating antiseptic dressings. The sutures should be removed about the fourth day.

If the lesion be simply tumefaction of the conjunctival membrane, it may be pencilled with nitrate of silver, by drawing the caustic from the inner to the outer canthus, just inside the ciliary membrane, wiping off the excess caustic with cotton, and protecting the parts by the application of a little bland oil.

The operation mentioned for over-developed membrane will be indicated if it be due to paralysis of the muscle. If due to insufficiency of the skin, it may be remedied by making a V shaped incision with the base near the edge of the lid, and the lid held in position by suturing the two lids together until the space between the edges of the incision is filled up by new tissue.

Entropion is the opposite of ectropion. The lid is inverted so as to bring the eyelashes in contact with the sensitive structures of the eye causing traumatic conjunctivitis, with suppuration, granulation, adhesion, and finally loss of sight. This condition is very much more common than ectropion. It is found in all our domestic animals, but most common in the dog, in which animal there appears to be more or less of an excess of skin. I am of the opinion that it is much more prevalent than most practitioners are wont to believe. The irritation and consequent pain causes the sufferer to keep the eye closed, which

increases the pressure on and injury to the eye.

The inversion may be the entire length of the lid, or only a small part of it may be inverted. It may be turned in so that not only the lashes, but the hair covering the skin of the lid contacts the eye, while in many cases only a limited number of the lashes are touching the sensitive structure called by some "trichiasis," but is merely a modified degree of entropion, and owing to the very slight anatomical defect, is much more difficult to diagnose.

One would naturally think a diagnosis would be easy, as the abnormality is in plain view, but such is not always the case. The constant pain causes the animal to keep the eye more or less closed, which hides the lesion. On careful observation, when the animal is not expecting you to disturb it, the opening to the eye will appear to be too small, then by comparison the ciliary margin will be seen to be displaced inward, to a greater or less degree.

This is, in all probability, always congenital, although it may become more aggravated from the constant contraction of the obicularis palpebrarum muscle, and is due to over-development of the skin of the eyelid, or rather too much skin for the mucous membrane, allowing the latter to draw the margin of the lid inward; may be either or both lids, but most commonly the lower lid.

Treatment consists in the removal of an elliptical piece of the lid, the same as of the membrane in ectropion. It is well to take up a piece of the skin with the forceps, to determine just how much it is necessary to remove to bring the margin to its normal position, then remove the piece included in the forceps by making an incision through the skin from the inner canthus, parallel to and just far enough from the margin to allow room for sutures, carrying it to the outer canthus, or further if the skin be turned in at the canthus, then commencing at the same point near the inner canthus, a counter incision is carried on the opposite side of the forceps, to join the first at the outer canthus, and the circumscribed piece removed, the edges brought

together by closely placed interrupted sutures, and treated antiseptically, as an open wound, or the entire part closed by antiseptic dressings. If the latter is desired, and both eyes are involved, only one should be operated on at one time, leaving the other for use by the animal. The stitches may be removed from the fourth to the seventh day. Complete anæsthesia and cleanliness are essential to a successful operation.

Blepharostenosis is a congenital malformation, where the opening to the eye is wanting or diminished in size, or the margins of the lids may unite from granulation of their surfaces as a result of disease or injury, causing complete anylosis of the lids.

Partial stenosis at the outer canthus is often seen in connection with entropion.

The treatment is similar, whether stenosis is partial, complete, or from adhesion by granulation.

If complete, the skin and membrane must be divided between the lashes from one canthus to the other, and the mucous membrane sutured to the skin with close, fine, interrupted sutures, with a view of getting union of the membrane and skin with the least possible granulation. As the latter is liable to reunite the margins of the lids, as a further precaution, a suture may be placed through the skin near the centre of one or both lids, and the skin of the adjacent parts above or below, or both, to draw the upper lip up and the lower one down, so as to prevent contact of these margins until cicatrization is complete.

I know of no operation that gives better results than those just described, and if carefully and skillfully done, the results are uniformly good.

DIARRHOEA AND A NEW TREATMENT FOR SAME.

BY W. T. CAMPBELL, V. S., CINCINNATI, O.

Diarrhoea in calves is something that every cattle breeder fears, and well he may, for although common among herded cattle, very little is known of it, and many are the calves we

lose every year from it. Among colts it has been very rare in this district until lately, but that may be caused by the few colts that have been raised until recently. It generally attacks them between birth and two weeks after, and I have noticed it in colts up to three and four years old, also in calves until they became yearlings, but the most fatal cases are those under two weeks. Having had a number of these cases lately I thought I would give a description and my treatment of same, which I would like my fellow veterinarians to comment on.

On May 17 I was called to see a colt, a big, raw-boned two-year-old gelding, in very poor condition, rough, staring coat, and a profuse foetid diarrhoea, with capricious appetite, insatiable thirst, pulse fast, temperature 100° , and respirations about normal. The colt had been in good condition until about a month previous, when he began to lose flesh, and for two weeks had been purging, and was so weak he went staggering all over the place. He had been running on grass, but I ordered him taken up and gave him a dose of oil of turpentine and linseed oil and ordered him fed on wheat bran, and powders of starch, chalk, and powdered opium every three hours. This seemed to have very little effect; so on the following day I gave him rectal injections of warm water and fluid extract of belladonna, and ordered powders of one-half dram of tannopine, given every hour. On the 20th he seemed better; diarrhoea was less profuse, and not so bad smelling. On the evening of the 22d he passed a large quantity of worms, to which I attributed the cause of the diarrhoea. Four days after I saw him; his coat was sleek, his spirits were high, and he seemed better than ever in his life. A few of the younger colts of the place had symptoms of the same, but were all checked by the same treatment before the disease had hold of them.

Now, this is not the contagious form of diarrhoea, but as it is out of the ordinary run of cases, being caused by worms, I picked it out as a good subject.

As to the contagious form: I was called to see a small roan colt at a farm where, although well fed, the stock was illy kept,

and in dark, damp stables. The colt was about five days old, and was continually lying, only getting up to nurse, and that was not often. Upon getting on its feet it would stagger as if drunk and probably fall before getting to its mother. The stool was watery and very foetid. I at once had him removed to a more healthy stable, and gave rectal injections of fluid extract of belladonna and one-half dram doses of tannopine every hour. The relief this gave was wonderful, and the second day after I found him well, although still very weak. It was on this day that a four-weeks-old was taken with the same disease and nearly all the young stock on the place were affected. I then ordered all buildings cleaned and whitewashed, the place thoroughly disinfected, and all loose boards and litter removed to a distant part of the farm. I treated the rest of the animals the same as the first, and checked the disease before well developed. I have had the same experience in calves.

On May 18 I was called to see a herd of cattle on Mr. S.'s farm, which is one of the best dairy farms in this district. The cattle were all Jerseys, and mostly in fine condition, but of late a few calves had been troubled with diarrhoea. The diarrhoea was watery, foetid and of a yellowish cast; the young calves were all affected, the new-born being the worst. The stable was in a low part of the farm and had been over-stocked, because of a part being taken to raise a new stock of sheep, and as a consequence was very unhealthy. The discharges were numerous, about every half hour, and the animals went staggering about like they were drunk. The temperature was high and slight pain in abdomen. I at once ordered them removed to a different barn, which had been cleaned and disinfected, and gave rectal injections and half-dram doses of tannopine hourly. All calves were fed with milk of the freshest cows, and were washed and kept clean and warm. Some of the lambs were affected, but most of them recovered under the same treatment. After the sixth day the disease was eradicated from the place, and had stopped one of those enzoötics which are so fatal to young cattle.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

CASTRATION OF AN ELEPHANT.

Operation Performed by DRS. WALTER SHAW, Dayton, O., and W. G. KING, Dodds, Cincinnati, O.

The patient was the property of the Wallace Circus Co. For many months he was so vicious as to imperil the lives of his attendants. This elephant (Pilot by name) was thirty-five years old, an age at which refractoriness should yield to obedience and docility. Pilot weighed 9000 lbs., and was ten feet high. His unruly disposition made it dangerous to exhibit him, and the devising of some means to subdue him was imperative. After due deliberation, his proprietor decided to have him castrated.

In February, 1899, Mr. Wallace advised us of his decision, and we visited the winter quarters of the circus on his beautiful farm by the classic banks of the Wabash, Peru, Ind.

Having surveyed the situation, we gave instructions for making excavation, platform, operating table and all other arrangements necessary for the completion of the operation, including instruments. The manner of confining the elephant and the mode of operation was as follows: Having secured two railroad rails on ties placed in the excavation, four large iron bands were fastened around each rail and tie beneath, for the purpose of attaching cable chains, block and tackle; the space between the rails was filled with cement and this was overlaid with heavy oak planks. His care-taker placed a large cable chain around his girth, in which was a strong ring just below his chest. To this ring another cable chain was fastened and passed through a ring safely attached to his tusk; then about the anterior of trunk through another ring on opposite tusk back to ring immediately under the body. In addition to this (as a guarantee of safety) a strong rope was passed several times around his trunk and tusks. In this condition he was conducted onto the platform, which he held in place by means of his own weight. To each foot a large cable chain was secured, slightly slack; this was accomplished to warrant safety in the event that the block and tackle should break. His front feet were then drawn forward and outward and his hind feet

were drawn backward and outward by means of block and tackle. At this juncture, the operating table, four feet wide and sixteen feet long, was arranged beneath his body; then his feet were extended until his body came in contact with the table slightly canted to the right side. A rope was attached to each tusk and fastened at right angles. As he was put under the influence of an anæsthetic the utmost caution was exercised. Thus insensible, an incision was made in his left side through the dermis, just posterior to the last rib, beginning at the end of the transverse process of lumbar vertebræ, extending downward about ten inches. The skin was an inch thick, white and almost bloodless; the external three-fourths of an inch was very viscous and difficult to cut. An eight-inch opening was made through the muscles and peritoneum, in which the hand was introduced, bearing forward, finding the glands just posterior to the kidneys. These glands were loosely but securely attached. The emasculator, which was made with a screw to remove the glands, broke before either gland was displaced, because it was too highly tempered; otherwise it would have answered the purpose. This misfortune made it necessary to reach in at arm's length and ligature the best possible way under the circumstances and remove the glands by the aid of the knife. The peritoneum, muscles and skin were saturated in the usual manner and the incision was closed with wound gelatine. The operation was made aseptic as far as possible. The influence of the anæsthetic had waned by the time the operation was completed, and the animal did not seem to be distressed. He lived fifty-seven hours, during which time his appetite was normal; did not seem to suffer until an hour before his death. The direct cause of his death is not known, as no examination was made.

With the right kind of instruments, properly constructed, this operation, which required an hour and a half, could have been accomplished in thirty minutes. Under favorable conditions, and with suitable instruments, we believe that the operation could be successfully performed, as it would then not be necessary to have the abdominal cavity open more than ten or fifteen minutes.

TORSION OF THE UTERUS.

By W. J. MARTIN, V. S., Kankakee, Ill.

Owing to the rarity of this obstetric malposition among solipeds the following case is thought worthy of record.

On May 1st of this year I was called a distance of twenty miles in the country to see a mare unable to foal. Upon my arrival I found a large draft mare weighing about 1600 pounds stretched out at full length near a strawstack in a field. The mare had been in the throes of labor for a period of twelve hours previous to my arrival, but without showing any sign of the "water bag." She was after much difficulty got upon her feet and taken to the barn, and placed in a large roomy stall.

Upon introducing the hand deep into the vaginal canal, numerous tense heavy folds of tissue were encountered. As the mare was twelve years old, and this being her first foal, fibrous occlusion of the os uteri was suspected. After much patient manipulation, aided by copious injections of tepid water, the hand was with great difficulty passed through the os uteri and into the uterus, where the foal's nose could be barely touched with the tips of the fingers.

In introducing the hand through the vaginal canal and into the uterus, it was noticed that the passage was sharply deflected towards the right flank of the mare, and it suddenly occurred to me that instead of a fibrous occlusion of the vagina or uterus, I had to contend with a case of torsion of the uterus, of a half turn nature and that the twist was from right to left.

Several attempts were then made to effect retroposition of the uterus, but without avail, and the attempts had to be abandoned on account of the powerful labor pains, which rendered the hand and arm when in the constricted passage, entirely useless. Seeing the hopelessness of any such attempts to effect retroposition of the twisted uterus, hobbles were placed upon the mare and she was thrown down and placed under the influence of chloroform. The mare was then turned completely over again and again, while the arm was *in situ* in the twisted vagina, and the attempt was made to untwist the contorsion when the mare was rolled in the opposite direction.

The most herculean efforts on my part failed to effect any change in the twisted uterus, and, being completely exhausted by the several hours of hard work, the attempt to effect delivery was abandoned and the mare was destroyed by chloroform narcosis.

The post-mortem examination revealed the correctness of the diagnosis; there being a half twist of the uterus from right to left. The uterus contained a full grown foal lying with its back to the mare's right flank, the fore feet retracted backwards, with the head close to the os uteri.

The cause of the torsion was no doubt explained when the owner stated that about a week previous, the mare was taken sick with a severe attack of flatulent colic, and during the paroxysms of pain would throw herself down violently and roll over from side to side. This is the first case of torsion of the uterus ever met with in my practice, and I can assure my professional brethren that I am in no hurry to encounter a second one.

HERNIA IN A CAT—SURGICAL INTERFERENCE—RECOVERY.

By ROBERT W. ELLIS, D. V. S., New York.

About June 1st was requested to see a black male cat about a year and a half old; dull, not eating, and sitting about listlessly a great part of the time. Examination revealed a reducible hernia, slightly to the left of the median line of the abdomen, and about midway between the rim of the pubis and the xiphoid appendage of the sternum; running slightly in an oblique direction forward and inward; its anterior extremity being apart from the median line about one-fourth of an inch; its posterior extremity, about three-fourths. Upon manipulation of the rim or edge of the hernia, after reduction, it proved to be slit-like in form, and about two and one-half inches in length, which I considered quite extensive, when compared with the length of an ordinary cat's body; and I may say to my professional friends, if not to its mistress, that the subject in question is an *ordinary* cat. The hernial sac before reduction was about the size of a large walnut. An operation was suggested to the owner of the cat, as the only treatment from which satisfactory results could be reasonably expected. This conclusion was reached by the following reasoning: 1st. The rent was slit-like in form, the hernia readily reducible and apparently free from adhesions, all points in favor of good results following an operation. 2d. The hernial sac was large, the rent in the abdominal muscles long, the uncontrollable nature of the animal, were all points unfavorable to other forms of treatment, as the use of trusses, etc.

Accordingly, at the owner's request, I operated on June 12. The cat, after being placed under the influence of ether, was laid upon his back, the hernia reduced, and thorough aseptic measures being observed, an incision was made in the skin, sufficiently large to receive a small curved scissors with which the opening in the skin was enlarged (being held away from the intestines with forceps), so as to expose the gaping aperture in

the abdominal muscles, through which could be seen the abdominal viscera, rising and falling with the respirations. The sides of the opening in the skin were held back with retractors, while the edges of the rent in the abdominal muscles were picked up with the forceps and freshened with the scalpel, then brought snugly together by an uninterrupted suture—a *contribution from the anatomy of some distant relative of the cat under operation*. The opening in the skin was then trimmed to suit the reduced surface it was to cover, and its sides brought into apposition by interrupted sutures; a compress of absorbent cotton saturated with creolin solution placed over the seat of operation was held firmly in position by a cheesecloth bandage, which was not disturbed until the seventh day after the operation, the cat in the meantime eating and feeling well. At this time the parts were thoroughly cleansed with creolin solution, and the same dressing renewed. The same procedure was gone through four days later, and finally, in seven days more, when complete union had taken place. This last dressing consisting only of a layer of dry absorbent cotton and a bandage, simply as a protection to the newly healed parts. To this last dressing the cat objected, however, and licked and chewed at it, sufficient to irritate the newly healed surface. The irritation was allayed by bathing with a mild creolin solution for a few days, when the following protective dressing was applied, as his mistress impressed upon me his proclivity for climbing and his passion for his opposite sex.

A "glycerini-gelatine" dressing was placed over the surface, about two inches more extensive on all sides than the seat of operation. An elastic bandage made to lace up the back was then worn by the cat for eight or nine days, but causing chafing in the region of the stifles and elbows, was left off by his mistress; and the cat, seeing no possible use for the glycerini-gelatine dressing, removed that also. The surface of the abdomen, over the seat of operation, and previous seat of hernia, is perfectly smooth and even, and the cat's health and spirits of the best.

What prompted me to report this case? Not because hernia in the cat family is rare, surely. And not because I think this particular line of treatment for hernia is new, just as surely. And certainly not because the operation is difficult. But I report it for a great many reasons. One is, because it is simple. Another is, because I do not believe it is done for the relief of cats in that condition very often—and if I can get in a word for

the cats, I am going to do it at any time. Another reason is, to encourage the use of ether in all operative procedures with cats, whether it be simply the extracting of a tooth, castrating a developed male (not necessary with very young kittens), or the more important and intricate operations that may present themselves. The administration of ether to cats is reasonably safe—the more you use it the more confident you will grow on that point; but if you wait for major operations, you will be long in becoming familiar with its use. Use it in the minor cases every day; it will add much to yours and the cats' comfort, and to your accomplishments with them. Another reason is, to show that the case reported was particularly suited to the operation, because of the slit-like form of the rent, which brought its edges close together, occasioning no undue strain upon the sutures, and because it was readily reducible, indicating no adhesions of the viscera to the sac; hence, no fear in incising it. Should the opposite conditions exist, the opening round its edges widely separated, making their apposition difficult, the operation could not promise an uninterrupted recovery; and if adhesions exist, the operation is that much more difficult, and the outcome less certain of good results, therefore not indicated.

These two extremes and the many intermediary conditions can be readily recognized after the hernia is reduced, or cannot be reduced, as the case may be; and a line of treatment and prognosis must be based upon the findings of this careful manipulation, and not simply upon the diagnosis of a hernia.

DEPARTMENT OF SURGERY.

BY L. A. AND E. MERILLAT,
of the McKillip Veterinary College, Chicago, Ill.

ABDOMINAL SURGERY.

ABDOMINAL OPERATIONS (*Concluded from page 377*).

2. *Intestinal Anastomosis.* — The veterinarian frequently meets conditions in the surgical diseases of the abdomen of domestic animals which can be benefitted by connecting one part of the intestinal tract with another: *e. g.*, the duodenum can be connected with the jejunum, ileum or colon; the jejunum with the ileum or colon; the ileum with the colon; one portion of the colon with another; or the colon with the floating colon. The indication for such interference is usually a pathological condition or an accidental injury to the intes-

tine. The pathological condition may be confined to the mucous, muscular or serous coat, but may involve all of them and be in such a state that the physiological function hinders nature in its reparatory process. The only course to be taken when such a complication is known to exist is to connect the part immediately in front of the portion thus affected to some part of the alimentary tract beyond the diseased portion, forming an artificial passage for the aliment, which will give rest to the part involved, and assist nature in its proclivity.

Accidental wounds which require a resection of the injured portion of the intestine should be treated in this manner, or some other commendable method adopted that will relieve the portion of the intestine approximated of part of its function and avoidable strain; alleviate pain caused by the contents of the alimentary tract passing over the hyperæsthetic area surrounding the seat of the operation; lessen the danger of infection as a consequence of this contact of aliment with the surgical wound; and, to afford an exit for gas generated and accumulated in the intestine anterior to the point in question.

To willfully neglect or refuse to inure intestinal anastomosis when indications suggest such interference would be invaluable, while a careful application of this method of easing and comforting a patient is often a prodrome to an operator's reputation as a surgeon.

Intestinal anastomosing may be divided, *pro forma*, into two distinct operations; the first (*a*) a lateral anastomosis, and second (*b*) an end-to-end anastomosis.

(*a*) *Lateral Anastomosis*.—In making a lateral anastomosis one division of the intestine is connected with another division without interrupting the natural channel by making an incision into each and suturing them together, forming an artificial opening which connects the lumen of one division to that of the other. (Fig. 12.) This opening permits the contents of the alimentary canal to pass from one division to the other, and is an artificial passage which in time becomes smaller and smaller and eventually closes entirely, and in the meantime the intestinal tract resumes its normal condition, with but a permanent adhesion of the divisions, which in many cases causes but little or no inconvenience to the patient.

Operation.—The patient must be properly secured and a general anæsthetic administered; the abdomen is opened, as in celiotomy; the cavity explored and the true condition ascertained; and, the place selected where the anastomosis is to be

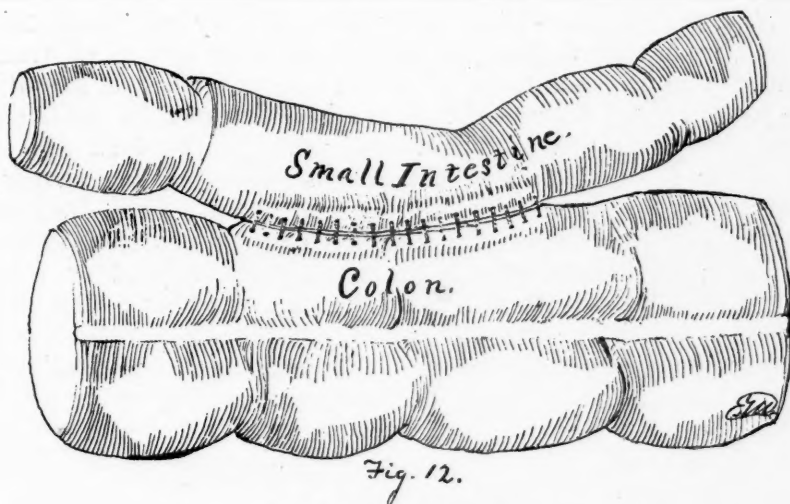


Fig. 12.
LATERAL ANASTOMOSIS.

made. If the intestine is diseased or badly injured, the portion thus affected should be resected before anastomosing, and in every instance the anastomosis must be anterior to the part resected or to the portion that is to be relieved of its function. After all the initiatory work has been completed an incision is made at the point of each division to be connected and the two portions sutured together by two rows of stitches surrounding the incisions. The sero-muscular series of stitches may be applied first to about three-fourths or two-thirds of the circumference of the surgical wound and the stitches ligated on the inside; this part being completed, the muco-mucous series should be applied and as many of them ligated inside as possible, and the remainder on the outside, after which the sero-muscular series may be finished. The sero-muscular suture must be made of catgut and the muco-mucous of silk.

When all the intestinal work has been completed, the cavity must be irrigated with sterilized water and the intestine returned into its proper place, avoiding the formation of a volvulus or an invagination; and the cavity closed and treated as in celiotomy.

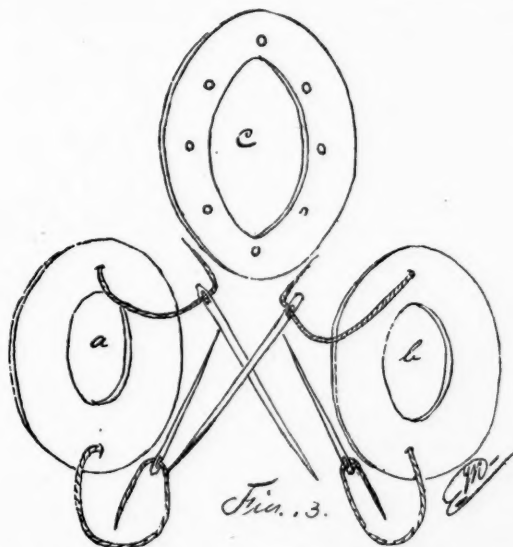
If upon opening the cavity it is ascertained that the alarming condition is due to an intestinal occlusion, caused by a stricture or enteroncus, the diseased portion should be treated as the indication demands; strictures resected and tumors ablated, together with such other interference as may be considered conservant.

After-treatment.—The after-treatment may vary to certain degree, upon the efficiency of the pre-requisite course of treatment. The first step to be taken is to adopt means of keeping the patient absolutely quiet; the peristalsis must be arrested; flatulence prevented, and pain relieved. No food should be given for the first two or three days excepting *per rectum*; water may be given in small quantities and often, *i. e.*, the amount should not exceed that which can be absorbed in the stomach; liquid food can be given after the second or third day and small quantities of easily digested food after the fifth or sixth day. The symptoms and complications which may arise in the course must be handled according to indications; internal hæmorrhage must be arrested; symptoms of sepsis checked; and a slow deferred reaction of shock should receive careful attention. The incision into the abdomen can be treated as in celiotomy.

In human surgery a lateral anastomosis of the intestine is made by using two decalcified bone plates (Fig. 13 *a-b*), one of which is placed in the lumen of the first division and the other in the lumen of the other division, after the incision has been made at the point selected; the needles of each are passed through the wall of each division but not ligated until the edges of the surgical wound have been sutured. When the plates are placed in position, and the edges of the wound sutured, the plates are ligated and the needles removed. A series of sero-serous stitches may be added along the line marked by the circumference of the plates. These plates are absorbed, and even their location becomes latescent.

This method is not practical for the veterinarian; he could not be expected to keep an assortment of these plates varying in size from those adapted for the cat to those required for larger animals.

There is another method that would be more practical in domestic animals than the one just mentioned. It is a method in which only one decalcified bone plate is used (Fig. 13-*c*). The plate is placed over the incision between the serous coats of the two divisions of the intestine to be connected. The edges of the surgical wound are sutured by a continuous stitch which is passed through one edge of the wound through a hole in the plate and through the other edge, then back to the first edge to a point opposite the next hole in the plate and passed through the edge, hole and other edge; this is repeated until the first hole is reached, but in the last fourth of the circum-



DECALCIFIED BONE PLATES USED IN LATERAL ANASTOMOSIS OF INTESTINE.
a, and b, used in pairs; c, used singly.

ference the stitches are not drawn up until the needle has been passed through all the holes of the plate, when they should be tightened one by one and the end of the thread fastened. When this suture is completed another row of stitches must be added at the circumference of the plate. These stitches must be made of catgut and should not penetrate the mucous coat of either portion, but bind the two serous coats together. The advantages of this method are few, in fact, there are none worth mentioning excepting that it keeps the opening that connects the two divisions from uniting or closing as soon as it might if it were not kept open by means of the plate. The after-treatment is the same as mentioned above.

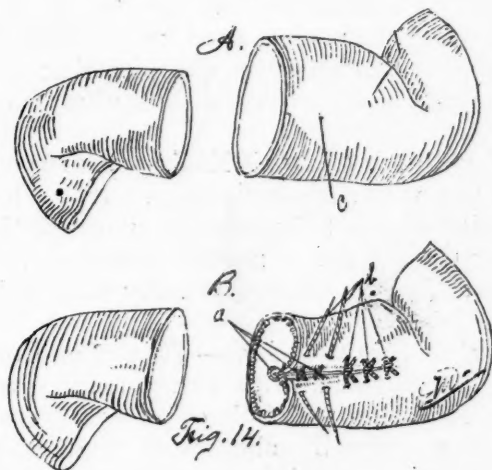
(b) *End-to-end Anastomosis*.—This is a term that has been improperly applied to an approximation of the ends of the intestine when all or the greater part of a division, or a part of two divisions is resected; *e.g.*, when the jejunum is resected and the duodenum connected to the ileum; the duodenum ablated and the pylorus united to the jejunum; or, the posterior part of the jejunum and the anterior part of the ileum are removed and the ends united so that the continuity of the intestine is restored, are all intestinal operations that have been named by some authorities *end-to-end anastomosis*.

This intestinal operation is much the same as a simple ap-

proximation with a resection of but a small portion of the intestine ; but, when a large portion is resected it is necessary to also resect part of the mesentery attached to the part removed, and by doing this the danger of primary, complementary and secondary hæmorrhage is increased, and great care should be taken to avoid this by carefully ligating all arteries, which if not properly done may necessitate a reopening of the cavity to check avoidable hæmorrhage resulting from such carelessness. A consecutive hæmorrhage following any intestinal operation is generally an alarming condition ; it usually begins after the surgeon is gone, and in many cases the change in the appearance of the patient is not noticed by the attendant before it has greatly depleted it, and before the surgeon can be informed of the condition and return to the patient, it is often too late ; the patient is either dead or too weak to withstand additional shock resulting from the reopening and exploration of the cavity and generally dies during the procedure if attempted under these circumstances.

In a resection of the intestine it is necessary to be conservative ; and yet, no part that is badly injured and likely to retard or prevent a speedy recovery, or subsequently impair the health of the animal, should be left intact ; or, if any part of it is affected by an invasive pathological condition or growth, all of it that was, is, or may be damaged by such an aggressive invasion, should be resected. In intestinal surgery no reliance should be placed in doubtful reorganization of tissues ; if there is the slightest suspicion that the injured tissue cannot be made aseptic, or that it may become necrotic from lack of blood supply, it must in every case be removed before any attempt is made to repair the injury ; and pathological conditions should be treated in the same manner.

Operation.—The patient must be secured, anæsthetized and the abdomen opened as in all intestinal operations. The cavity is then carefully explored, the existing condition ascertained, and the surgical course judiciously adopted. The part of the intestine injured or diseased is resected, together with the mesentery attached to it ; hæmorrhage must be carefully looked after, the arteries should be ligated as near to the large trunk whence they originated as possible, and when all hæmorrhage is arrested, the ends are then approximated. If the ends are of the same size, the procedure is very simple, but if one end is larger than the other, the larger should be reduced to the size of the smaller, by making a longitudinal incision (Fig. 14-A-c)



END-TO-END ANASTOMOSIS.

A, Ends of intestine to be approximated when of different calibre; *B*, ends when reduced to the same calibre; *a*, Czerny stitches; *b*, Lembert stitches; *c*, line where longitudinal incision is made.

and suturing it with Czerny-Lembert's suture (REV. XXIV., 4, p. 282), and when of uniform calibre, are approximated and sutured by using the method of suturing approximations which the surgeon considers most appropriate (REV., Vol. XXIV., No. 4, Surg. Dep't.). It is advisable to get as much of the contents of the intestine in region of the part to be resected into the portion that is to be resected and ligate both ends of it, providing that it is not perforated. If perforated either from disease or trauma, the opening may be enlarged if necessary, and contents removed through it; and if any of the contents or septic products from the diseased portion should escape into the cavity, it must be removed at once by irrigation; sterilized water or a mild antiseptic solution may be used for this purpose. After the intestinal operation is completed the cavity should be irrigated again and the abdomen closed in the usual manner. The after-treatment is the same as in lateral anastomosis.

When a large portion of the intestine is removed the results are generally not so satisfactory as those following a small resection. The danger of infection is increased; the system is depleted by shock and hæmorrhage; and the function of digestion and absorption is impaired to a certain degree by the loss of the portion resected; together with a number of unavoid-

able results, such as tension upon an omentum or mesentery; enteralgia, resulting from impaired nerve function; hypertrophy of the tissues surrounding the cicatrix; or a stricture caused by the cicatrix, are all conditions that may follow this operation.

The Murphy Button (REV., XXIV., 3, p. 216) can be used in this operation to a very good advantage. It can be adjusted in less time than it requires to suture the ends together properly, and in this way the operation may be shortened, which is generally a long tedious procedure, especially when a large portion of the intestine is resected.

3. *Intestinal Approximation.*—This operation is similar to the one just described, with but a small part of the intestine resected, instead of a whole or greater part of a division. The indications are usually abdominal wounds, punctures or pathological conditions involving all the coats of the intestine. The wounds may be caused by an accidental injury in which the abdomen is opened and the intestine prolapsed and injured and perforated before this secondary accident can be prevented; or, it may be injured while still in the cavity, as in case of a gunshot wound, or a wound inflicted with a sharp cutting instrument such as a knife, chisel, corn-cutter or scythe. Punctures of the abdomen are more common than incised wounds, and they may be caused by animals running into or falling upon sharp or blunt pointed objects; or may be gored by cattle. If the intestine is injured in this manner, the injury is generally a lacerated wound, a bruise, or a puncture, and a resection is only necessary when the injury involves the greater part of the circumference of the intestine. There might be classed among the accidental wounds, rupture of the intestine (*Enterorrhesis*), which is sometimes caused by torsion of the body when the intestine is united to the abdominal walls; in such cases a resection may be necessary in order to repair the injury properly. Among the *pathological conditions* that may require a resection may be included tumors of the intestine (*Enteroncus*); septic condition of the intestine (*Enteropyosis*); gangrene of the intestine; and stenosis of the intestine (*Enterostenosis*), which may be due to a constriction of the circular muscular fibres or a hypertrophy of the walls. There are only a few cases in abdominal or intestinal injuries in which it is possible to determine whether or not a resection is necessary without an exploration of the abdominal cavity.

Operation.—The patient must be cast, properly secured,

anæsthetized and placed in the most favorable position to open the abdomen at the place selected. If the indication for the operation is an abdominal wound with visceral injury, or a prolapse of the intestine complicated with a perforation or laceration of the part protruding, the incision made to open the abdomen must pass along the longitudinal axis of the accidental wound, but it must be remembered, however, that the hair must be clipped and shaved before the incision is made; a surgical wound with a *hispid* edge always makes a suspicious wound; but, if the operation comes under the second classification of *Indications for Abdominal Surgery* (Vol. XXIV., No. 3, Surg. Dep't), the place for the incision is left to the discretion of the operator; and may be made as described under "Celiotomy" (Vol. XXIV., No. 5). In all cases the abdominal cavity should be explored sufficiently to ascertain the extent of the injury, but unnecessary manipulation of the viscera should be avoided. The contents of the intestine should be removed either through the wound or an opening made in the part to be resected. When this is done the diseased or injured portion should be resected, being as careful as possible to avoid unnecessary hæmorrhage and arresting unavoidable hæmorrhage. It is absolutely necessary to arrest *all* hæmorrhage in *all* intestinal operations. In resecting all the diseased portion and surrounding tissue that may become pathological must be removed, or if the demand for resection is an accidental wound all the lacerated tissue that is likely to become gangrenous must be included in the resection, but no part should be included in it unnecessarily; it is proper to be conservative and save as much of the injured portion as possible, and good judgment should be exercised in differentiating tissues. After the resection is made, the ends are approximated and sutured by the most appropriate method. If the procedure is to be shortened, the Murphy Button may be used, and if it cannot be obtained, Jobert's method of approximation may be used, as it is the most simple method, but not the most reliable (Vol. XXIV., No. 3). If a good reliable result is desired from a clean aseptic intestinal approximation, the sutures should be made by the Czerny-Lembert method (Vol. XXIV., No. 4, Fig. 6). This method will prolong the operation, but its reliability will compensate for the ordeal. An approximation sutured by the Czerny method (Fig. 7) is not so substantial as the Czerny-Lembert suture. The Lembert suture can also be utilized for this purpose (Fig. 8) and is a very good safeguard

against infection (theoretically), providing that the stitches do not slacken before the edges have united. If Czerny's suture is selected it should be made with good catgut, well sterilized; in fact, all approximations sutured with a single series of stitches must be made of catgut, but those to which a secondary series is applied, the inner can be made of silk or linen, and the outer one of catgut. The stitches should be ligated carefully, applying uniform tension to all those included in each series respectively and tying them with a sailor's knot (Fig. 9-b).

When the intestinal operation is completed the cavity should be well irrigated with warm water; and, when thoroughly cleaned, the intestine replaced. In returning the intestine, care should be taken not to place it in an abnormal position and not to leave any foreign bodies in the cavity. We can recall a case that died almost a year after an abdominal operation, and upon post-mortem examination a pair of artery forceps were found in the abdominal cavity; and there are other instances where sponges and tampons have been left in the cavity. It is therefore advisable to count the sponges, tampons and instruments before the operation, and again before the cavity is closed, for such mistakes and oversights are a discredit to the surgeon. Being satisfied that the cavity is thoroughly cleansed, and all instruments, sponges and tampons removed, the abdominal incision is then sutured in the same manner as in celiotomy.

After-care.—The first thing that should receive attention is shock, and must be treated as shock following other operations; peristalsis must be arrested; pain relieved; thirst must be quenched by administering small quantities of lukewarm water, sponging the mouth and by the administration of an occasional nutritious enema; sepsis should be treated by subcutaneous injections of a normal salt solution, cold application, and if the temperature keeps on rising the cavity should be reopened and the septic products removed and parts well irrigated with antiseptics; and food should be withheld for the first two or three days, and at first should be given in very small quantities. The temperature should be carefully watched for the first three or four days; a sudden rise is an indication of sepsis, and the treatment should be as the conditions demand.

4. *Enterotomy.*—This is an operation that is of more importance to the veterinarian than other intestinal opera-

tions, and its indications may be classed as follows, viz.:

- (A) Coprosthesis.
- (B) Intestinal occlusions.
- (C) Foreign bodies in the intestine.
- (D) Intestinal dilatations containing foreign substances.

(A) *Coprosthesis*: the accumulation of faecal matter in the intestine, due to the arrest of its onward flow, either from the lack of nerve supply or a hardening of the aliment, as a result of a chemical change or insufficient moisture, and which cannot be expelled or relieved by any other means, should be removed by opening the abdominal cavity and the intestine at the appropriate place. Among the additional causes of coprosthesis may be enumerated faulty alimentation, inactivity, forced idleness and lack of exercise, abrupt dietetic changes, inactivity of intestinal glands, and paralysis of the intestine. *Faulty innervation* may reduce the peristaltic action of the intestine and allow the contents to fill the lumen, or cause a dilatation in which is collected the indigestible part of the aliment, which may eventually cause an accumulation of the faecal matter and completely occlude the intestine. *Hardening of aliment* may result from the increased absorption of the stomach and anterior portion of the intestine, and the arrest or impaired secretion of intestinal glands; the chemical changes in this connection are manifested in the form of calculi. *Faulty alimentation*: foods containing a large amount of cellulose or other indigestible substances may accumulate in the intestine, become hardened by the absorption of its moisture, and thus form an obstruction which may in time completely fill its lumen. *Inactivity*: animals that are not exercised and fed on large quantities of rough food, and those that are "laid up" and fed on nutritious food without exercise, when accustomed to hard and regular work, may acquire some digestive disorder which may be followed by an accumulation of the contents of alimentary tract. *Abrupt change of diet*: when animals are accustomed to a certain kind of diet, the digestive organs adapt themselves to the demand made upon them to facilitate its digestion, and any sudden deviation from the ordinary diet may cause some functional disorder of the intestinal tract which may be followed by coprosthesis. *Paralysis* of the intestine is often followed by the accumulation of the faecal matter, and in many cases cannot be relieved unless the paralysis is only local.

(B) *Intestinal Occlusions*.—Under this classification of indications for enterotomy can be considered all obstacles that can

arrest the flow of the contents of the intestine, which can be relieved by the removal of the contents through an opening made in the intestine, and the causes of such occlusion may be enumerated as follows, viz. :

- (a) Calculi.
- (b) Strictures.
- (c) Tumefaction.
- (d) Dilatation of intestine.
- (e) Change in relation of intestine.

(a) *Calculi*.—A calculus seldom causes an occlusion in itself, but in many cases it is the primary cause of the occlusion ; very few of them exceed eight or ten centimeters in diameter ; hair balls (*egagropilæ*), which produce the same disorder, are usually larger than calculi. In many instances the calculus causes a tumefaction of the walls of the intestine by irritating them, and this hypertrophy of the wall lessens the calibre of the intestine and eventually almost or entirely closes it, and requires a resection of the part thus affected in addition to the removal of the contents. The symptoms of intestinal occlusion due to calculi are the same as in coprostasis, but now and then a calculus may be found in the excreta, and when such conditions cannot be relieved by medication, enterotomy is the only resort. To this classification may be added all obstructions that are caused by foreign and indigestible substances.

(b) *Strictures*.—These may be caused by a constriction of the circular muscular fibres or a hypertrophy of the walls ; the exciting cause being generally an injury, a chronic catarrh of the intestine may produce a hypertrophy ; helminth may cause the same condition or any injury that will cause a cicatrix. Anterior to these strictures is usually a dilatation caused by the increased pressure resulting from the arrest of the contents of the intestine. Enterotomy may relieve the condition temporarily, but if the stricture greatly reduces the lumen, it should be resected.

(c) *Tumefaction* of the walls of the intestine will reduce the calibre of the intestine and the contents will accumulate anterior to the constricted part and form a dilatation. These tumors may be cancerous or sarcomatous, and may require ablation, but if the temporary condition is accidental, due to faulty dieting and the patient unable to withstand the removal of the tumefied portion, the contents of the intestine may be removed by enterotomy, but in such instances the relief would be only temporary ; a resection is the only radical method to adopt.

(d) *Dilatation of the Intestine.*—Dilatations may result from impaired nerve supply, prolonged obstructions, accumulation of indigestible substances, strictures and tumors. Those that are caused by impaired nerve supply to a part of the intestine are usually partly filled with the contents of the alimentary tract, and can be relieved by enterotomy and reduced to its normal size by suturing; those caused by prolonged obstructions may be treated in the same way, the contents removed and the incision sutured; and those resulting from a stricture and tumor (*enteroncus*) require a resection and also a reduction of the calibre of the dilated portion.

(e) *Change in the Relation of Intestine.*—These obstructions are more common than those caused by other means. The cause of the occlusion of the intestine due to intestinal alterations may be as follows, viz. :

First: Volvulus.

Second: Intussusception.

Third: Intestinal strangulation.

Firstly, volvulus is more common to the small intestine and floating colon, than in the large colon, and consists of a rotation of the intestine upon its longitudinal axis. An occlusion caused by a volvulus that has existed for a long time, should be treated by removing the contents that have accumulated anterior to the volvulus by enterotomy and replacing the intestine in its natural position.

Secondly, an intussusception or invagination consists of the passage of one portion of the intestine into the lumen of the other, and in this manner occludes the opening and arrest the passage of the ailment. The site of the invagination is usually at the cæcum; and the following varieties may be observed, viz.: the *ileal*, in which the ileum passes into the cæcum; the *ileo-cæcal*, when the ileum and the ileo-cæcal valve protrude into the cæcum; *colic*, when the large colon extends into the cæcum; and, the *ileo-colic*, when the ileum extends through the cæcum into the colon. Each of these conditions may produce an obstruction, and require the removal of the accumulated aliment by enterotomy and the restoration of the intestine to its normal position.

Thirdly, intestinal strangulations may be caused by the passage of the intestine through the foramen of Winslow, the inguinal ring, perforations of the mesentery, omentum or broad ligament. The treatment of these occlusions consists of relieving the strangulation, and if the accumulation of the contents

of the intestinal tract is likely to cause any systemic disturbance, it should be removed by making an incision into the intestine.

(c) *Foreign Bodies in the Intestine.*—The foreign bodies found in the intestinal tract of domestic animals vary in different species: those common to the horse are calculi, sand, broken nails, tacks, and small pebbles, to which we may add intestinal worms that accumulate and form bunches or balls which act as foreign bodies. The intestinal *calculus* is a chemical compound composed of the phosphates and carbonates of insoluble bases, which accumulates around some nucleus, and is enlarged by the continual deposition of these salts. *Sand* often accumulates in the intestinal tract of herbivora, and is taken into it with the water, grass or hay; in some animals it is taken into the digestive tract by eating dirt, an aberration of appetite (*pica*); and, in other instances it is due to a depraved appetite. Small pieces of nails, tacks and pebbles are often swallowed with the food.

The foreign bodies found in the intestinal tract of the ox are bezoars, hair balls, sand, clay, rags, leather, and pieces of wood, glass, crockery, tile, together with all kinds of rubbish; and, most invariably, these articles are taken into the alimentary tract as a result of an aberration of appetite.

In the dog, the foreign bodies found in the intestinal tract are bones and such objects with which it plays. It is not uncommon to find marbles, pebbles, nails, balls, coins, corks, sticks and sponges in the intestine of the dog. When the condition, produced by these foreign bodies, cannot be relieved by palliative treatment, the abdomen should be opened and the objects removed through an incision made into the intestine.

(d) *Dilatation of the Intestine Containing Foreign Bodies.*—Dilatations of the intestines may be divided into two varieties, viz.:

(a) Dilatations caused by foreign bodies.

(b) Dilatations caused by obstructions.

(a) *Dilatations Caused by Foreign Bodies.*—These dilatations are produced in obedience to the law of gravitation; the weight of the object enclosed in the intestine rests upon the inferior part of the wall which causes a dilatation of this part of the wall by the continual strain on the anatomy involved. The *cul-de-sac* though small at first, enlarges as the weight increases; if caused by a calculus, it increases in size by the accumulation of the precipitates which enter into its composition; and, if

caused by other foreign bodies, the pouch is enlarged by the accumulation of the constituents of the contents of the alimentary canal having the greatest specific gravity (clay, sand, etc.). These dilatations can be successfully treated by making an incision into the intestine (*enterotomy*) and removing the contents in it and suturing the intestine to its proper size.

(b) *Dilatations Caused by Obstructions.*—These dilatations are located anterior to the obstruction that occludes the intestine, such as strictures, intussusceptions or tumefactions of the walls of the intestine. The treatment of these conditions generally requires a resection of the stricture or tumefied portion; but, if caused by an invagination, it should be relieved and the dilatation treated as indications demand.

Operation.—This operation is comparatively simple; the patient is cast, secured and anaesthetized; the abdomen opened and explored, and the site for the incision selected. If the place selected is located in the small intestine, the incision should be made in the direction of the longitudinal axis (Fig. 15, *B-c*); but if in the large intestine it should be made at a right angle to the long axis (Fig. 15, *A-a-b*). In the small intestine

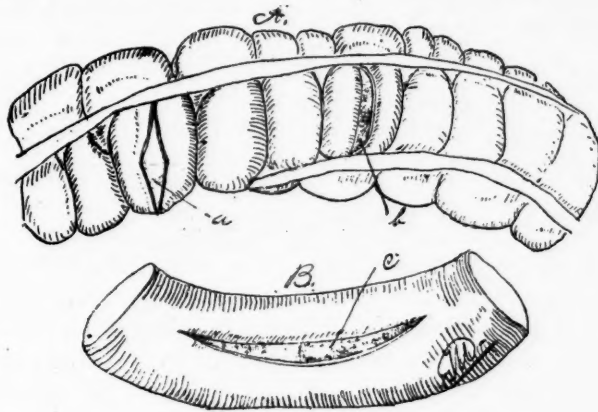


Fig. 15

ENTEROTOMIES.

A, large intestine; *B*, small intestine; *a* and *b*, location of incisions in enterotomy of large intestine; *c*, location of incision in enterotomy of small intestine.

there are two reasons for making a longitudinal incision; first, because it can be made sufficiently large to conveniently remove the contents of the intestine; second, because it can be sutured so as to reduce the calibre of the intestine if a dilata-

tion exists. In the large intestine the incision is made across the longitudinal axis, because it is more easily sutured than when made longitudinally; the colon is composed of a number of consecutive pouches or *culs-de-sac*, and if incised longitudinally, two or more of these will probably be opened which will make an irregular surgical wound difficult to suture properly.

If the part to be incised can be brought to the outside of the cavity, it should be done before the incision is made and the contents removed; but, if it cannot be done the contents should be received in some convenient sterilized vessel. Every precaution should be taken to prevent the contents escaping into the abdominal cavity. If the intestine is dilated, its size should be reduced by suturing; if any part is diseased, it should be resected and the ends approximated, after the contents are removed; this being done, the peritoneal cavity is carefully irrigated and closed; and the after treatment is the same as in other intestinal operations.

(To be concluded.)

N. B.—It will be noticed that the instruments required for abdominal and intestinal operations have not been mentioned, which was due to an oversight; will refer to them in the summary at the close of the article on "Abdominal Surgery"; however, this is not a serious error; the veterinarian that will attempt abdominal operations does not include among his surgical instruments—the *cleaver* or *squeegee*.—(E. M.)

SURGICAL ITEMS.

ABLATION OF ANAL (*Odoriferous*) GLANDS OF THE SKUNK (*Mephitis Mephitis*).—To Dr. J. M. Wright, veterinarian for the Lincoln Park Zoological Garden, Chicago, is probably due the credit of being the first veterinarian to perform this unusual as well as unique operation. While it is not probable that this procedure will ever become a very common one with the veterinary surgeon, on account of the unpleasant smell attending the least error in the technique of the operation, and the rarity in which the skunk is used as a pet animal; yet, it is one well worth remembering, because an animal thus treated can be kept on exhibition in full view of the public without danger of the consequence of its wrath; besides, it is said that the skunk when domesticated, makes a good rat and mouse exterminator; and, an operation that will transform an animal whose very

name can hardly be referred to in polite society into a useful household pet, is certainly not valueless. It might be well to mention that the odoriferous fluid of the skunk is not its urine, or connected in any way with its urinary apparatus, but is secreted by two enormously developed follicles situated in the rectum (in the lateral walls), and which empty their contents through two large papillæ located on each side and just inside of the anus. The glands (*follicles*) are no more or less than well developed anal glands found in all carnivora. The papillæ are brought to view by an inversion of the anus, which cannot be done without the animal raising or curling its tail; and the follicles are covered with well developed muscles over which the animal has perfect control, and which are strong enough to eject its stream for a distance of three to four metres. The technique of the operation is as follows: the animal if tame can be deprived of its apparatus without the annoyance of smell by preventing it from curling its tail over its back; but, if wild it will surely give vent to its wrath while being caught. In any event, when caught the tail must be kept in a straight line with the body. The surgeon brings the papilla to view by inverting the anus (which is very large) with the fingers, and each papilla is grasped with a strong artery forceps which will prevent the ejection of fluid; first, one pair of forceps is taken up and a circular incision is made through the mucous membrane around the base of the papilla, and with gentle traction the pear-shaped pouch is brought to the surface without further ceremony; the opposite one is treated in the same manner, which leaves two small surgical wounds from which the patient shows no perceptible inconvenience. A remarkable point in the anatomy of the organ is its loose attachment to the surrounding structures. When the mucous membrane at the base of the papilla is incised no other adhesions prevent the follicle from coming out easily.—(*L. A. M.*)

The successful surgeon is the one that adopts the simplest and plainest methods to accomplish his purpose. He who has perfected his operative methods, so that they are as practical in an ill-constructed, inconvenient stable, as in a well equipped hospital, and performs his operations with neatness and alacrity instead of making them long, bloody, tedious procedures, and who can with the instruments of his pocket case, do as well as with an instrument agent's paraphernalia, is a practical surgeon; and does as much to advance science as the surgeon that demands a well equipped operating room, and magnifies the

technique unnecessarily, notwithstanding that "Simplicity marks the surgery of 1900."—(*E. M.*)

In bowel lesions, whether great or small, the aim of surgery is to preserve the integrity of the bowel. A bowel should not be resected as a matter of choice. Well-pronounced indications should be present to warrant such radical procedure. In looking for such indications one may fall short of or overstep a conservative position.—(*T. A. Ashby.*)

The reasons for the early removal of surgical dressings are sepsis; secondary hæmorrhage; displacement of surgical dressings and bandages; undue pressure of dressings and bandages; dressings soiled by fæces or urine; and, dressing soaked by wound secretions. When surgical dressings are left undisturbed for six or seven days it is advisable to explain to the client your object for not removing them sooner, as he may think that you are neglecting your patient.—(*E. M.*)

Theoretically it is impossible to absolutely disinfect the skin of the patient and the hands of the operator. Practically it is one of the simplest tasks to obtain a degree of surgical cleanliness that will insure primary wound-healing.—(*A. J. Ochsner.*)

Avoid the use of force in irrigating the abdominal or pelvic cavity; if a syringe or douche bag is used for this purpose, use only sufficient pressure to make a gentle stream, and allow the water to run over the surface in obedience to the law governing fluids.—(*E. M.*)

EXTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

SHARP BUT PROFITABLE LESSON IN HERNIA.—Under this title a young practitioner, "Novice," records this interesting case to guard others from a similar predicament: The subject was a pony gelding which presented a large swelling on the inside of the near thigh. At first the case seemed to be simple enough and a diagnosis of lymphangitis was made out and appropriate treatment ordered. For the three following days there was no change, but after a few more the symptoms assumed more severe characters, and a soft prominence was observed on the inside of the thigh three inches below the stifle. This was punctured with an incision large enough to introduce the little finger, but nothing came out of the cavity. On the following day the horse was taken with violent pains and the

bowels protruded some 18 or 20 inches through the incision made the previous day. The animal was destroyed. At the post-mortem a rupture six inches long was found in the abdominal floor through which the bowels had escaped and gave rise to the swelling spoken of, which occupied a space between the skin and the muscle. The position of the hernia on the inside of the thigh was the cause of the error of diagnosis.—(*Vet. Record.*)

DROPPED ELBOW [*By H. L. Roberts*].—An aged bay mare was found very lame one morning in the stable; there was little pain, severe lameness, and when the animal was made to walk, she progressed with the utmost difficulty and seemed in danger of falling down. Her elbow on the off fore leg was considerably lower than that of the near side. A diagnosis of fracture of the first rib was made out, and for reasons of economy the mare was destroyed. At post-mortem the first rib was intact, also the olecranon. There was some infiltration about the region of the elbow. The author concludes by asking the question "how often are we justified in giving the opinion of a fractured first rib in those cases where radial paralysis is one of the chief symptoms manifested?"—(*Vet. Record.*)

EVERSION OF THE UTERUS IN THE MARE.—Referring to the scarcity of cases on record, the author, Dr. W. R. Davis, relates three cases which occurred in his practice, one which proved fatal because of the uterus being crushed by the foal, and the excessive weakened condition of the mother; a second, which he reduced by manipulation, after the application of a body twitch and the administration of a good dose of chloral. In the third case, the mare had considerable œdema of the hind legs, and for three weeks before foaling had to be helped to rise, and on several occasions had to be slung to keep her standing. She foaled, but a few hours after had complete eversion of the uterus. Her hind parts were raised with sacks of chaff, and with some difficulty the organ was replaced, and the vulva stitched. She made rapid recovery. The author believes that anæsthetics are not necessary, as a rule, nor even desirable. Four grains of morphia or six drachms of chloral may be used to dull sensibility. Antiseptics are useful to clean the uterus. Metro-peritonitis and laminitis are sequelæ to be looked for, and are guarded against by antiseptic washes and laxatives.—(*Vet. Record.*)

AN OBSCURE TUMOR [*By A. Whicher and F. Olver*].—A dachshund bitch was brought to them carrying a swelling on

her abdomen, which looked like a mammary tumor. They postponed interfering. The next day they were informed that a physician had chloroformed her, and after taking the necessary precautions, began to operate, without having any idea as to what he should find. He dissected the tumor, and when he came to its base found a stricture, the nature of which he could not make out. He ligatured it and removed the "tumor," which on being opened was found to contain a perfectly developed fœtus. The bitch made a good recovery, and at the proper time gave birth to four perfectly healthy pups.—(*Vet. Record.*)

RUPTURE OF THE UTERUS [*By G. J. Roberts*].—A cow was delivered by embryotomy of a celosomian monstrosity. On examining the part afterwards a complete rupture of the uterus, 12 inches long and six inches from the os, was discovered. After allowing the animal to recover from the exhaustion of her difficult labor, the doctor applied 30 continuous stitches on the edges of the uterus. When the last was made the needle was withdrawn and the loose end held in the left hand, whilst the sutures inside were tightened up with the right hand. The cow made a good recovery. Slaughtered several months after, no trace of a scar could be seen on the uterus.—(*Vet. Record.*)

INTERESTING NEURECTOMY PATIENT.—Mr. F. Hobday, who has resorted to the operation of neurectomy many times, records the case of one animal which had ringbones on both fore legs and a series of splints on each cannon bone, which were very tender. Median neurectomy was performed with the ordinary results—removal of the lameness. Two years afterwards the same horse became very lame with spavin of the near leg, which resisted firing and blistering. Anterior tibial neurectomy was not successful, but when the posterior tibial nerve was divided an immediate great improvement was observed, and continued until the lameness had entirely disappeared, and the horse has been able to do his work ever since.—(*Vet. Record.*)

TAPEWORMS FROM A DOG [*By G. Perkins*].—This is certainly a record. Small fox terrier, 10 months, suffered with tapeworm. After starving 24 hours he is given 20 grains of freshly grated areca nut. It operated well. The dog was relieved of 95 complete worms, *tænia serrata*. Only those that had a head were counted. The lot together weighed 5 ounces. They were between 18 and 30 inches in length.—(*Vet. Record.*)

ITALIAN REVIEW.

COLLASTINA IN VETERINARY SURGERY [*By Dr. A. Baldoni*].—Under this name the author refers to an emulsion of wax, gum arabic, glycerine, water and oxide of zinc, already used by an Austrian physician, and which has been more or less modified by Dr. Zenoni, of the Serotherapeutic Institute of Milan, who experimented with it as a new protective apparatus for heifers used in the preparation of Jenner vaccine. The author has tested its application in veterinary surgery and obtained with it excellent results. Collastina is a soft, whitish substance, with odor of wax and has great adhesive properties and can be readily spread over the surface of a wound of the skin, and adapting itself well to all irregularities. It can be rendered more aseptic by the addition of formaline, salicylic acid, salts of silver, etc. It is applied on the parts it is to cover after shaving off the hairs, and thorough disinfection. When supported by a coat of wadding outside it forms an impermeable dressing. Used in large sutured wounds of the skin it has prevented the introduction of germs into the wound. It is very useful in regions where it is very difficult to apply a germ-tight dressing, as on the face, in the regions of the neck, of the shoulder, the croup, the withers, etc. In the dressing of foot operations, in wounds with loss of substance after periostotomy, in amputation of the tail, and specially for dogs its advantages are always very great. The author also recommends it as an adjunct, a support in cases of fractures of the extremities of small animals. However, collastina is not free from one objection—similar to that of many forms of plasters; it ordinarily becomes loose after four or five days, but yet it has so many advantages that it cannot fail to become more in use and to supersede all other preparations used with the same object.—(*Clinica Veter.*)

LARGE SANIO-PURULENT COLLECTION IN THE UTERUS OF A MARE [*By MM. C. Sanfelin and S. Vicariotto*].—For a month this mare has lost flesh and from the vulva throws a certain quantity of dense yellowish liquid when she is about micturating. She has been covered several times; now she is thin, but shows no change in her pulse or temperature. In making rectal exploration the uterus is felt largely distended and by gentle pressure over it a whitish yellow discharge is made to escape by the vulva. The canula of a large syringe was introduced through the vulva and through it some 42 litres

of some liquid substance was extracted. It was very foetid in odor, and made up partly of serous yellow brownish fluid and of a sanious solid mass, extracted by fragments from a foetus dead some time. The uterus was thoroughly washed with a solution of sublimate at half per cent. Subsequently the cavity was irrigated with tannic acid solution, 20 per cent. Recovery was complete in 14 days. The case is recorded to show (1) the resistance offered to infection by the uterine mucous membrane without showing manifestations of septicæmia; (2) recovery obtained by the use of a treatment which by many others have been regarded as fatal.—(*Clinica Veter.*)

TRAUMATIC PARALYSIS IN A CALF [*Dr. C. Tovo*].—While sucking his mother, the little fellow was thrown down by her, which in moving her leg had passed it through his collar. The calf fell with his neck bent and was found with his head bent under the cow's abdomen. When relieved the mother moved away, but the calf remained down, paralyzed, and when put on his feet would be unable to stand, but would drop down on his side with his head and neck bent backwards towards his flank. All his functions were otherwise normal. Subcutaneous injections of 5 centimetres of sulphate of strychnine and 4 grammes of iodide of potassium were prescribed. Improvement was soon manifest, but after three days the dose of strychnine had to be reduced to 2 centigrammes to be given every other day. After a week or so of this treatment the calf was able to stand and by degrees recovered entirely.—(*Clinica Veter.*)

POISONING OF A STEER WITH SULPHATE OF COPPER [*By G. B. Platti*].—Exhibiting great excitement, muscular spasms and great sensibility of the abdomen this animal had for two days lost his appetite, his rumination, and had abundant saliva escaping from the mouth. His temperature was 36.7, the beatings of the heart strong and irregular, respiration accelerated, fæces dry, hard and coated. On inquiry from his driver he reported that he had used him to pull a wagon carrying a solution of the copper salt to irrigate the fields of grape vine. The diagnosis imposed itself. The treatment consisted in the administration of the white of eggs, red wine and tannic acid with rectal injections of solutions of bicarbonate of soda (2%) and friction of alcohol over the whole body. In a week's time the toxic effects of the copper were gone and the animal was able to resume his work.—(*Clin. Veter.*)

CŒNURUS CEREBRALIS IN A TWO-YEAR-OLD HEIFER [*By G. B. Platti*].—The symptoms exhibited by this patient were

as follows: temperature normal, respiration short and anxious, beatings of the heart and pulse normal. She is dull but at times is taken with convulsions. She had been bought only the day before and began to show her symptoms when put in her stall. Unable to make a diagnosis at a first visit, and noticing the difficulty of motion of the hind quarters of the animal, the author suspected a dropsical condition of the brain and advised slaughtering. At the post-mortem and examination of the cranial cavity he found lesions of fibrino-purulent pachymeningitis, and a rather large cyst filled with whitish points, which examined with a powerful magnifying lens proved to be hooks of *tænia cœnurus*.—(*Clin. Veter.*)

REVIEW OF BIOLOGY.

ENDOGLOBULAR HÆMATOZOA OF SHEEP [*By Lavedan and Nicolle*].—In September and October last Mr. Nicolle observed in the vicinity of Constantinople a small epizooty in a flock of sheep. The principal symptoms were: fever, general dullness, diarrhœa, submaxillary œdema. Death occurred in two or three days or the animals would recover. The following lesions were observed: slight exudation in the serous cavities, œdematous aspect of all the tissues, blood fluid and rosy in color, some ecchymosis under the pericardium, tumefaction of the entire ganglionic system, slight hypertrophy of the spleen, intestinal mucous membrane congested. The endoglobules of the blood contained round or oval parasites. Each parasitic element had a round or elongated karyosoma, situated on the periphery. Free parasitic elements were seen, in small number comparatively to the endoglobular elements. The parasitic elements are much more numerous in the spleen than in the blood of the great circulation; they had the same aspect but were larger. There were also elements in the way of division; they were more abundant than in the blood of the general circulation. This epizooty seemed identical with the disease called in Roumania *carcurg*, which Babes attributes to an hæmatococcus. It is probably the same that gave rise to the epizootics observed by Bonome in the sheep of the surroundings of Padona. The endoglobular hæmatozoa of sheep is evidently closely related by its simple structure and mode of endogenous reproduction of the parasite of Texas fever, *piroplasma bigeminum*. The authors call it *piraplasma ovis*.—(*Soc. de Biology.*)

ENDOGLOBULAR PARASITES OF DOGS—NATURE OF INFECTIOUS JAUNDICE OF DOGS [*By P. Leblanc*].—The presence of the symptom ictère in sheep carrying hæmatozoa allowed the thought that their presence would explain the nature of infectious jaundice in dogs. Indeed, that disease has all the character of a fever of marshes. It affects principally the hunting dog, and no plausible supposition as to its nature has yet been presented. In the blood of a dog suffering with a very severe attack of infectious jaundice, the author has found in large quantity, hæmatozoa very analogous to those found in cattle and sheep suffering with hæmoglobinuria. Examination of fresh blood has given the best results. The parasites are fixed on the hæmatin, but exist in great number in the plasma. Although one single observation is not sufficient to establish the fact that the disease is due to the hæmatozoa, it is right to suppose that they play an active if not the unique part.—(*Soc. de Biol.*)

PIROPLASMA CANIS IN THE DOGS OF SENEGAL [*By Dr. E. Marthome*].—In 1895 Piana and Galli Valerie observed in dogs in Italy the presence of an endoglobular hæmatozoa which by its form resembled the *piroplasma bigeminum* of Smith and Kilborne. R. Koch found it in Oriental Africa. Mr. Marthome has observed it in Senegal in the blood of eleven dogs. He calls it *piroplasma canis*. These dogs exhibited a slight rise of temperature, corresponding to the period where the parasites were in greatest number in the circulation. None had jaundice. The hæmatozoas of dogs differ from those of cattle by being larger, their bigemination is less frequent, and they are oftener outside the globules. It would be interesting to know if it is the same as the one described by Mr. Leblanc.—(*Soc. de Biol.*)

BIBLIOGRAPHY.

LAS ENFERMEDADES DEL GANADO (The Diseases of Animals), by D. Monfallet, late Professor to the Agricultural Institute of Chile.

Under this title, the author has given an excellent treatise, including general pathology and therapeutics, as well as internal pathology with all microbian diseases. Having dedicated it to Prof. Leclainche, his teacher, Mr. Monfallet has with great talent condensed in few pages many essential points very interesting to read. Far superior to many "Vade Mecums" already existing in our literature, the little work gives

in its whole ensemble a very correct idea of the present state of the knowledge of animal pathology.

Written in Spanish, for agriculturists in Chile, the book deserves to be read by veterinarians; it is a precious acquisition to Spanish literature, still so poor. Consideration of special diseases observed in Chile, give to the work of Mr. Monfallet a special interest.

A. L.

COLLEGE COMMENCEMENTS.

CHICAGO VETERINARY COLLEGE.

The seventeenth annual commencement exercises of the Chicago Veterinary College were held on Tuesday, March 27th, at the College auditorium, when a number of friends of the graduating class were present. Prof. Joseph Hughes presided. The degree of M. D. C. was conferred upon the following gentlemen: A. W. Beveridge, Belle Center, O.; T. W. Corkery, Urbana, Ill.; F. H. Davis, Ottawa, Ill.; H. A. Hela, Cokato, Minn.; J. J. Heldring, Amsterdam, Holland; J. Hill, Jr., N. Platte, Neb.; H. Jensen, Weeping Water, Neb.; O. H. Leonhart, New Washington, O.; L. F. Miller, La Salle, Ill.; A. J. Roll, Natrona, Pa.; G. Springer, Hastings, Neb.; L. C. Tasche, Sheboygan, Wis., and A. M. Wray, Richmond, Ill.

Dr. H. Jensen, of Weeping Water, Neb., was awarded the gold medal for the best general average in all branches. Dr. H. A. Hela, of Cokato, Minn., received the prize of Theory and Practice consisting of a \$25 case of instruments. Dr. F. H. Davis, Ottawa, Ill., was presented with \$25 worth of books on account of his high standing in anatomy.

In conclusion Prof. A. H. Baker made a few interesting remarks concerning the future prospects of the veterinarian and wishing the parting graduates a prosperous career.

CORRESPONDENCE.

A REPLY TO DR. HOSKINS.

ITHACA, N. Y., Aug. 15, 1900.

Editors American Veterinary Review:

DEAR SIRS:—The March *Journal*, in its "review" column, made an attack on the Publication Committee of the A. V. M.

A., which carefully read reflected unfavorably on the committee, the association, and the veterinary profession in America.

It asserted in effect that the members of the association through their votes had elected a President who so disregarded the interests of the profession as to create a Publication Committee consisting of such men as Secretary Stewart, Treasurer Lowe, Professor Bell, editor of the AMERICAN VETERINARY REVIEW, Dr. R. P. Lyman, and the writer, who ignorantly, hastily and carelessly issued "Proceedings" from which important papers had been omitted, other papers had been ruined by editing, and the discussions and transactions had been falsified, hence association funds recklessly wasted and the association and profession in America dishonored.

But it was noticed that with the criticism the writer's name was linked in a manner suspiciously akin to numerous previous slurs in the same columns, and the question arose whether it was intended as a beneficent criticism for the good of the association and profession or a "stiletto" thrust at a member of the committee. Believing that if the *Journal's* attack were sincere a caustic rejoinder would cause its editor to sustain his charges, while if otherwise he would turn upon the writer in a storm of personal abuse and thus disclose what we suspected to be his real motive, we contributed to the REVIEW for June a communication justifiable only, if at all, by the ends sought. The reply of Dr. Hoskins in the August REVIEW fully accomplished the desired result and his motive stands out clear.

It only remains for us to correct one or two erroneous deductions, due perhaps to misreading of our communication in June REVIEW, when Dr. H. summonses us to present evidence that he has misappropriated association funds. We made no such charge. We suggested that he account for the destiny of some association proceedings. In the Report of Pub. Com. for 1893, there appears in Vol. XV., p. 391, *Jour. Comp. Med.*, the statement: "50 copies (of proceedings 1893) remain in the sheet for future binding as required," beyond which we cannot trace them. Again, when Dr. Hoskins turned over the association property in his hands to the writer he reported the delivery under date of Nov. 21, 1897, among other property 170 paper-bound copies of 1893 "Proceedings," which, after they had been receipted for, were carefully examined, and it was found that 76 of the wrappers stamped as containing "Proceedings of 1893" contained other matter of about the same bulk instead.

Probably Dr. H. can account for all these, but to do so he

will have difficulty in showing that he, too, has not "omitted important papers" or "severely extracted others," or made incorrect returns in his stewardship.

Neither did we charge Dr. H. with having used association funds to pay for the "*Journal's* special," but simply for "a special," and based our query on the following:

I. Proc. U. S. V. M. A., 1891-92, edited by Dr. W. Horace Hoskins; p. 67, Secretary's statement for year ending September 14, 1891. To C. R. McKenzie, Dist. Pass. Agent, B. & O., \$28.70.

II. In the archives of the association in Dr. H.'s handwriting: "Sept. 17, 1890. Secretary's expenses Feb. 2. Mr. C. R. Mackenzie, Dist. Pass. Agent, B. & O., voucher, \$28.70."

III. Attached thereto the following voucher:

[Copy]

BALTIMORE AND OHIO RAILROAD COMPANY,)
PASSENGER DEPARTMENT,)
PHILADELPHIA, PA., FEBRUARY 2d, 1891. }

Subject.—\$28.70 owing on rate made for excursion.

Received from Dr. W. Horace Hoskins the sum of twenty-eight dollars and seventy cents, being amount due C. R. Mackenzie, Dist. Pass. Agt., B. & O. R.R., to make good deficiency in rate caused by lack of sufficient delegates to make up the required guarantee.

\$28 $\frac{70}{100}$

[Signed]

C. R. MACKENZIE,
Dist. Pass. Agt.

Respectfully submitted, W. L. WILLIAMS.

NEWS AND ITEMS.

THE average amount of sickness in human life is ten days per annum.

IN 1800 there were 220 horses in Australia; in 1900 there are 2,000,000.

A TRIAL of paper horseshoes, without nails, is shortly to be tried in London.

OVER 50,000 horses were lost up to April 1 by the British in the South African War.

FULLY 800,000 domestic animals, valued at \$6,000,000, are annually devoured by wolves in Russia.

SEVERAL WOMEN have already matriculated for the next session of the New York-American Veterinary College.

DR. C. A. CARY, Alabama Experiment Station, has issued a valuable bulletin on "Texas or Acclimating Fever."

DR. H. D. HANSON, of New York, returned to the city about the middle of August, after six weeks' sojourn in the mountains.

DR. W. C. LANGDON has severed his connection with the North Dakota Agricultural College, and removed to Omaha, Neb.

DR. REGINALD WALL, of Carbondale, Pa., has engaged with the British Government in the transportation of live stock to South Africa.

THE NEW STATE VETERINARIAN OF OHIO is Dr. J. C. Burnison, of Kenton, who will have his headquarters at the Wooster Experiment Station.

DR. HULBERT YOUNG, graduate of the U. of P., class 1900, has been appointed assistant veterinarian of the District of Columbia.

A VOLUNTEER in a Colorado regiment at Manila has been cured of stuttering by being shot through the throat by a Mauser bullet.

EIGHTY THOUSAND ELEPHANTS are annually required to supply the world with ivory, and most of them come from South Africa.

"WHAT is the difference between 'ill' and 'sick'?" "When my horse was 'ill' I sent for a doctor; when I got his bill it made me 'sick.'"

THE PARIS OMNIBUS COMPANY, during the Exposition, has 92 lines and 1500 vehicles performing 25,000 journeys a day, with a capacity of 1,028,000 passengers.

DR. M. H. REYNOLDS, of Minnesota, recently presented a paper on "Live Stock Sanitary Work" at the annual meeting in Duluth of the Minnesota State Medical Society.

MR. F. DRUMM, manufacturer of Drumm's celebrated thermo-cauteries, has removed his manufactory from 43 Park Street to 229 East 22d Street, New York City.

DR. J. I. GIBSON, State Veterinarian of Iowa, is one of the incorporators of the Iowa Stock Food Company, organized recently with a capital of \$10,000.

DR. W. E. A. WYMAN, formerly located at Milwaukee, Wis., has been compelled by ill-health to relinquish private practice, and has removed to Burlington, Wis.

NORTH DAKOTA VETERINARY EXAMINERS.—Two candidates—D. D. McNaughton, of Devils Lake, and J. W. Hagerman, of Walwalla—passed the Board at its meeting on April 11, and were granted certificates to practice.

DR. JOHN E. BROWN, Oskaloosa, Iowa, Secretary of the Iowa State Veterinary Medical Association, has been on a month's vacation to his old home in Ohio.

WE acknowledge the receipt of a season ticket and a courteous invitation to attend the Toronto Industrial Exhibition from the President, Prof. Andrew Smith, F. R. C. V. S. The fair occurs from Aug. 28 to Sept. 7, and the live stock exhibit is to be a special feature.

A BROOKLYN (N. Y.) VETERINARIAN has agents going the rounds of large firms endeavoring to make contracts for treating their horses, in the manner that shyster lawyers obtain their damage suits. It is hard to make a silk purse out of a sow's ear.

VIRGINIA STATE BOARD OF VETERINARY EXAMINERS.—The following have been appointed by the Governor: Drs. Harry Bannister, Roanoke; H. L. Drake, Leesburg; Wm. H. Bolyne, Lincoln; Wm. T. Gilchrist, Norfolk; Thomas M. Sweeney, Richmond. The officers of the Board are Dr. W. T. Gilchrist, President, and Dr. H. Bannister, Secretary.

MARYLAND VETERINARY LICENTIATES.—The Board of Veterinary Medical Examiners met in Baltimore in June and granted licenses to the following candidates: F. B. Berger, V. M. D., Baltimore; G. W. Horner, V. M. D., Finksburg; L. A. Nolan, V. M. D., Baltimore; and Hulbert Young, V. M. D., Washington, D. C.

CLARA BARTON writes: "Among the shocking and heart-rending scenes of the battle-field the screams of the wounded horses lingered more painfully in my ears, if possible, than the moans of the wounded men. They die slow and hard if left to themselves, and I have seen the vultures hovering and tearing at them while life yet remained."

STRONGYLUS CONTORTUS is reported by Dr. H. E. Titus, of Maxwell, Iowa, in the *July Journal*, to be the cause of many deaths in a herd of Angora goats. Post-mortem showed the fourth stomach full of them. An emulsion of turpentine and milk repeated at intervals of four days, until four doses had been given, saved all but one of those affected.

DRS. S. STEWART, of Kansas City, and James Law, of Ithaca, N. Y., at the request of *The Horseshoers' Journal*, contributed to the July number of that excellent publication opinions as to the effect of rubber pads upon horses' feet. Their conclusions were that many of the styles of pads were not injurious, but served many useful purposes.

"I PRIZE THE AMERICAN VETERINARY REVIEW very much. Have Vols. XXII. and XXIII. bound and find them very valuable books of reference. We have a very good bindery here, and

each volume makes a very fine looking book. It costs me only \$1.50 per volume, and when thus well bound they are at least worth six dollars per volume."—*D. D. Keeler, V. S., Salem, Ore.*

DR. LIAUTARD writes that he has just recovered from nervous prostration due to the heat and overwork at the Exposition. It sounds strange to hear of a retired man overworking himself ; but those who know the good doctor understand that the relinquishing of active practice simply meant more time to devote to some other work. And they also know that if he was working at the Exposition it was in the vicinity of the veterinary exhibit.

JOHN FAUSNER, D. V. S., graduate of the American Veterinary College, class of '98, died at his residence, 303 West Fifty-third Street, New York City, July 29, from septic infection following an operation for appendicitis on July 6, and it is stated that for two days his temperature registered 109°F. The death of this promising young veterinarian, who had just entered upon a successful career in private practice, is peculiarly sad, his demise following in less than a year that of his brother Oscar, also a veterinarian.

MERCK & CO. OPEN A BRANCH HOUSE IN CHICAGO.—The old-established and popular drug and chemical house of Merck is known to physicians and veterinarians all over the country wherever high quality and reliability are esteemed, and we are glad to announce to our Western readers that they have opened a branch of their great New York establishment at 227 Randolph Street, Chicago, Ill., where the same careful attention to inquiries and orders will be given as has always characterized their Eastern house. Mr. J. W. Parry, an old and trusted employé of the firm, will have charge of the new department.

FOOT-AND-MOUTH DISEASE PREVALENT IN EUROPE.—A dispatch dated Washington, August 11, says : Official advices to the Department of Agriculture report that foot-and-mouth disease is very prevalent among live stock throughout almost all of Europe except Norway, Sweden and Holland, and importation of animals from European countries, principally from Germany, France, Austria, Belgium and Switzerland, is being prohibited by this government. A special permit from the Secretary of Agriculture is required for the entry of all these animals subject to contagious disease, and applications for permits from the countries where the dreaded disease is prevalent are being refused by the department.

THE HORSESHOEING FRATERNITY have a much better method of supporting its journals than the veterinarians. A local association appropriates sufficient money to place its representative magazine, *The Horseshoers' Journal*, in the hands of each of its members. Both the organ of the craft and the craftsmen are thus benefitted and strengthened. By the way, few professions or trades have a more progressive and interesting exponent than the *Journal*. While veterinary associations can scarcely be expected to follow the example of the local horseshoers' unions, clubs composed of individual members could be the rule of associations rather than the exception, as at present, and the organizer of the club would receive liberal compensation from the publishers. Try it, and you will be doing your profession a real service.

A NEW TREATMENT FOR FISTULA.—Dr. W. T. Campbell, of Cincinnati, O. (*Journal of Comparative Medicine and Veterinary Archives*, June, 1900), states that veterinarians have long experienced the need of a remedy for fistula that would be less irritating than the ordinary caustics and still stronger in action than the mild antiseptics. Recently he has found protargol to be just the thing for such cases, since, although not as irritating as nitrate of silver, it possesses the same bactericidal effect. In several cases of fistulas of various origin he employed injections of a solution of protargol 10 parts, glycerin 50 parts, and water 40 parts, injected with a syringe three times daily. Under these injections in connection with internal medication the discharge rapidly subsided, and the fistula healed more promptly and permanently than had been previously observed under other forms of treatment.

THE "NEW YORK MEDICAL JOURNAL" CHANGES OWNERS.—The ownership of the *New York Medical Journal* has passed from the publishing-house of D. Appleton & Company to Mr. A. R. Elliott, an advertising agent of this city. We understand, however—we certainly hope—that the editorial department will remain in charge of the present editor, to whose able management for so many years the journal owes its high professional standing. This change has been anticipated for some time, for it was learned last spring, at the time of the temporary embarrassment of this old and honored publishing-house, that some of their publications, notably the *New York Medical Journal*, were financially unprofitable. Notwithstanding an actual subscription list of something over six thousand, and an advertising patronage of upward of forty pages per week, the

expenses of publishing this journal were considerably in excess of the income from all sources, and the receiver, therefore, decided to dispose of the property, with the result above stated. It will doubtless be a matter for surprise to the great majority of the profession to learn that a medical journal apparently so prosperous was financially a failure, and it will perhaps dispel the idea which seems to prevail that the profits of publishing medical journals are fabulously large. Those who have had experience in such matters know well that the publication of a medical journal is very different from that of an illustrated magazine for the general public. The latter can be sold at a price irrespective of the cost of manufacture, and thereby secures an enormous circulation, the profit on the undertaking being derived wholly from the advertisements. The number and variety of the latter which can be secured for a monthly magazine are practically unlimited, whereas in the matter of reputable medical advertising there is a very sharply defined limit. This change of ownership of the *New York Medical Journal* may serve to impress the truth of the facts just stated upon the minds of the more or less experienced financial backers of some other of our contemporaries which are now being published at a heavy loss.—(*Medical Record*.)

ASSISTANT WANTED.

A veterinarian wanted to act in capacity of House Surgeon and Assistant; prefer middle-aged married man that has had some practice. Address, T. W. SPRANKLIN, D. V. S., Maryland Veterinary Hospital, 1311 to 1321 Harford Ave., Baltimore, Md.

ALEX. EGER, 34 East Van Buren St., Chicago, Ill.,

Veterinary Publisher, and dealer in Veterinary Books, Drugs and Instruments, is the authorized agent of the REVIEW in Chicago and the Middle West, and will receive subscriptions and advertisements at publisher's prices.

SECRETARIES OF V. M. ASSOCIATIONS

Can make money for themselves and do much good to their profession by getting up Subscription Clubs for the REVIEW. Write us for club rates and full information.

REVIEWS FOR EXCHANGE.

I have these duplicates: Vol. XVIII, July (1894); Vol. XV, April and May (1891). I need the following: Vol. XIX, September and October (1895); Vol. XVII, January (1894). Would like to exchange with some one having duplicates, etc. HUGH THOMSON, V. S., Sharbona, Ill.

NOVEMBER, 1894, REVIEW WANTED.

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